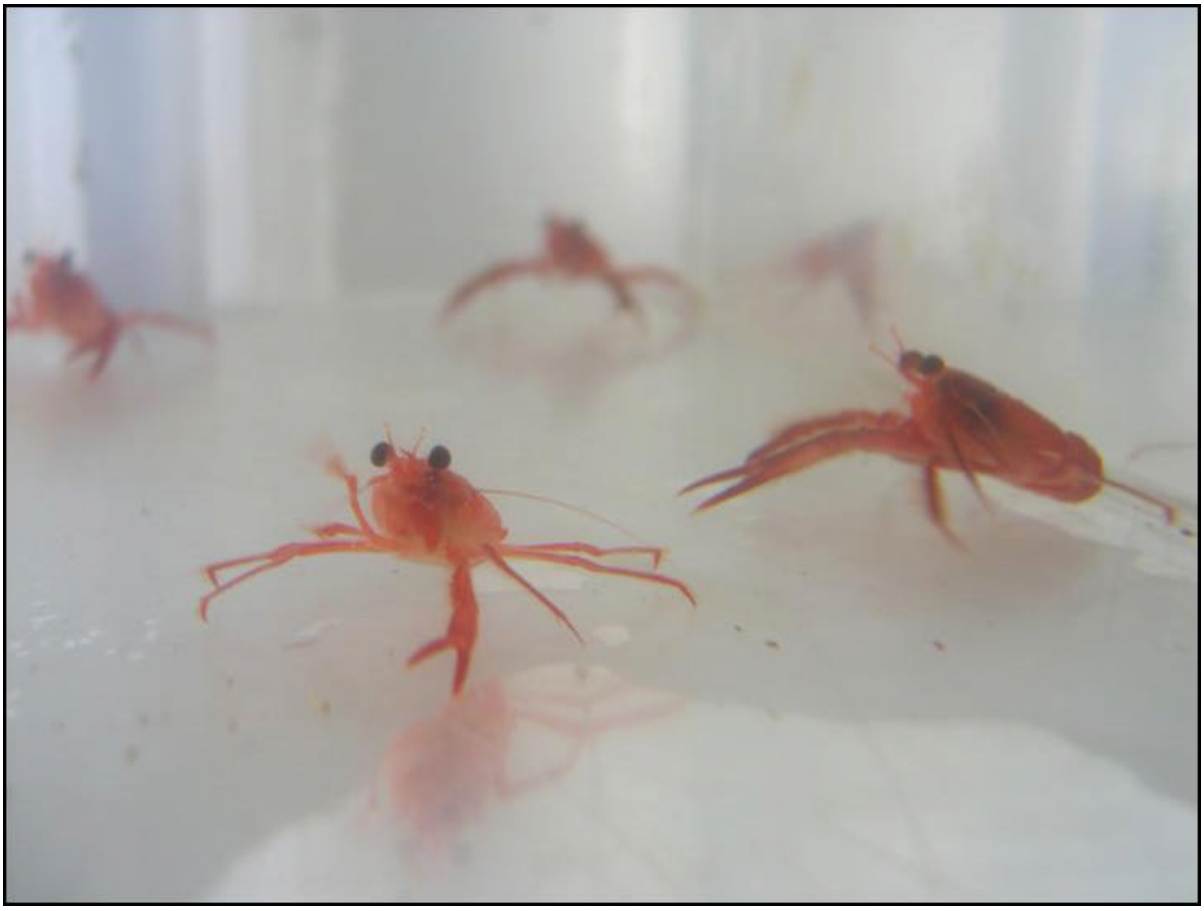
CRUISE REPORT
S207

Scientific data collected aboard
SSV Robert C. Seamans

San Diego, California – La Paz, Baja California Sur – Puerto Vallarta, Mexico

12 October – 20 November, 2006



Pelagic Red Crabs (*Pleuroncodes planipes)* collected with dip net off western Baja Peninsula.
Photo by Jeff Schell

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Table of Contents

Table 1. S207 Ship's crew and student participants

Nautical Staff		
	Terry Hayward	Captain
	Jeremy Law	Chief Mate
	Jullie Jackson	2nd Mate
	Johnny O'Keefe	3rd Mate
	Dusty Smith	Engineer
	Seth Murray	Assistant Engineer
	Chris Wang	Steward
Scientific Staff		
	Jeff Schell	Chief Scientist
	Mary Engels	1st Scientist
	Jane McCamant	2nd Scientist
	Nate Twichell	3rd Scientist
Scientific Observers		
	Raymundo Avendano	CICIMAR professor
	Norma Alejandra Sanchez Reyes	CICIMAR student
Students		
	Courtney Bell	Colorado College
	Anne Carter	Unity College
	Kaitlin Forman	University of Vermont
	Lily Holland	Bryn Mawr College
	Peter Horn	University of North Carolina, Chapel Hill
	Nathaniel LaPier	Trinity University
	Jovan Livada	Hamilton College
	Meghan Lucy	Connecticut College
	Robin Sarabia	Oberlin College
	Kyle Sherman	Davidson College
	Katherine Sherwood	Colorado College
	Jenna Shlachter	Colorado College
	Edward Slater	Trinity College
	Amanda Sparks	DePaul University
	Colin Stroud	Colorado College
	Hiroaki Tanaka	Brown University
	Pamela Teixeira	Tufts University
	Lauren Wang	Dartmouth College
	Allison Weide	Bowdoin College
	Alan Worf	Lewis and Clark College
	Henry Wrenn	Colorado College

Data Description

This cruise report provides a record of data collected during S207 aboard the *SSV Robert C. Seamans* from San Diego, California to Puerto Vallarta, Mexico (Figure 1) with a stop at La Paz on the southeastern shore of Baja California Sur. We collected samples or data with 170 individual deployments from 91 discrete stations (Table 2) along our cruise track. In addition we continuously sampled water depth, sub-bottom profiles and Acoustic Doppler Current Profiles (ADCP) along with flow-through sea surface temperature, salinity and *in vivo* fluorescence. This report summarizes physical, chemical and biological characteristics along our cruise track and around surveyed seamounts and islands.

The S207 cruise track traversed several oceanic regions that can be distinguished by their sea surface temperature, salinity, density and fluorescence values (Figures 2a-b). Sub-surface water masses and their chemical properties were also surveyed using a CTD and 12 bottle carousel (Tables 4 and 5). Large scale hydrography are summarized by contour plots of temperature, salinity and sound velocity along our cruise track (Figure 3) and for specific transects across key oceanic features (Figures 4a-e) and around surveyed seamounts and islands (Figures 5a-c). Large scale current patterns are summarized by contour plots of current direction, magnitude and echo amplitude (Figure 6).

The distribution of neuston net, meter net, and Tucker trawl stations and corresponding zooplankton density and numbers of select nekton species are presented (Tables 6-8). Location and relevant station depths for sediment samples are shown in Table 9. Secchi depth at various locations is also provided (Table 10).

A complete oceanographic survey of Jasper seamount, Cerralvo seamount and the coastal waters of Isla Guadalupe were completed. Additional CTD, CHIRP, ADCP and biological data not reported here are available on request through Sea Education Association (SEA) and the Chief Scientist. The information in this report is not intended to represent final interpretation of the data and should not be excerpted or cited without written permission from SEA.

In addition, vertical and horizontal distribution patterns of myctophids (lantern fish), and the marine insect *Halobates* were studied in relation to environmental characteristics. Results, not reported here, are available upon request through SEA.

As part of SEA's educational program, undergraduates conducted independent oceanographic research during the cruise. Project explored regionally, relevant topics in the disciplines of physical, chemical, biological and geological oceanography (Table 11). Student research efforts culminated in a written report and public presentation to the ship's company. These papers are available on request from SEA.

Jeff Schell
Chief Scientist
S207

Figure 1. Final cruise track for S207 based on hourly (local time) positions. Oceanic biomes recognized during S207 include Southern California Bight (SCB), offshore California Current (CC), inshore and offshore Southern Baja (SB_i and SB_o), and Gulf of California (GC). Extensive transects were conducted at Jasper seamount, Isla Guadalupe and Cerralvo seamount. Additional sampling focused on Santa Barbara Basin (SCB region) and Soledad Basin (SB_i region).

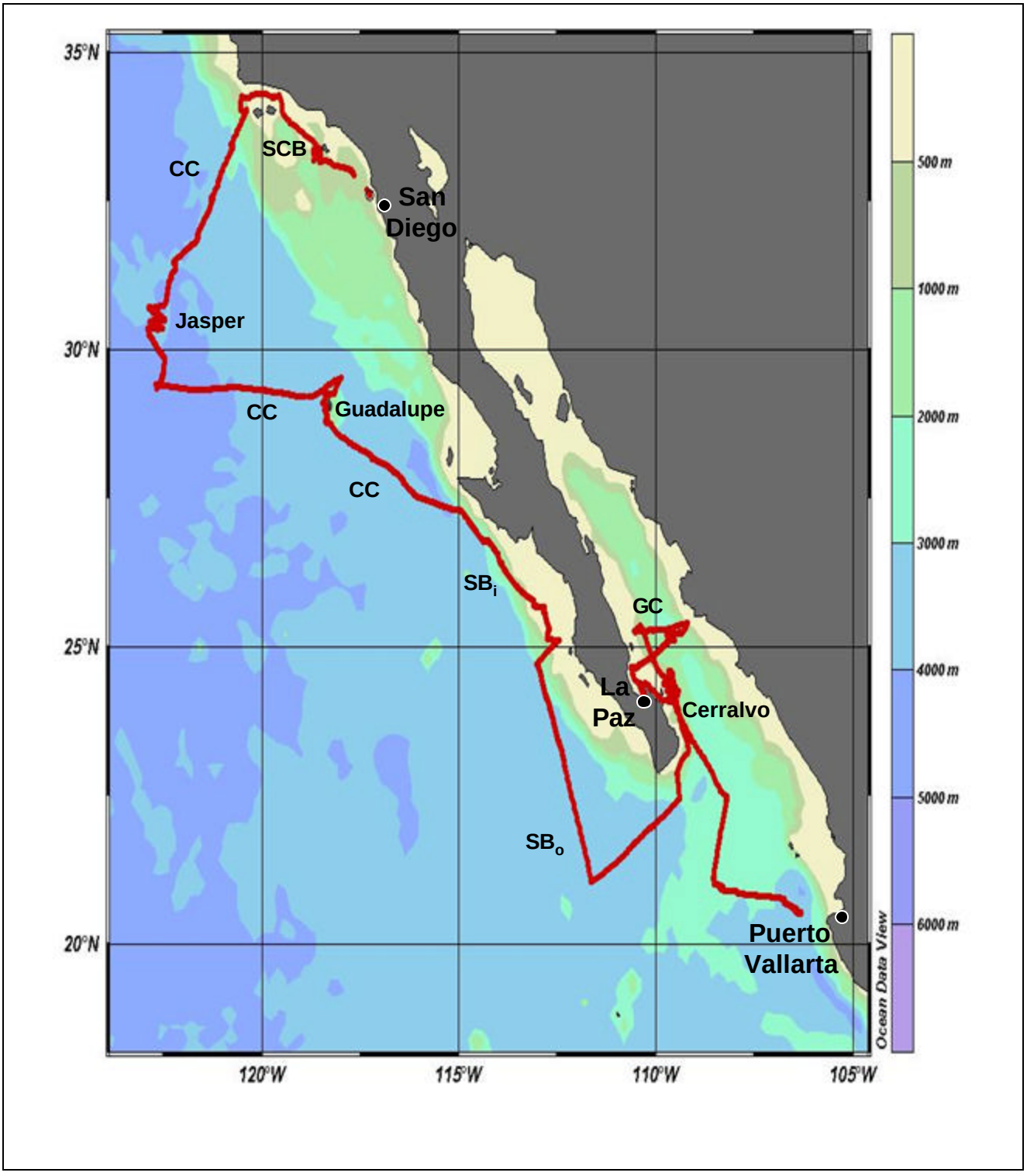


Table 2. Station summary of oceanographic sampling for S207.

Station # (S207-)	Date (2006)	Time (local +5 GMT)	Log (nm)	Lat (dec Deg N)	Lon (dec Deg W)	Location	Station Type
001	14-Oct	0029	40	33.05	-117.87	Southern CA Bight	NT
002	14-Oct	0830	78	33.16	-118.52	Southern CA Bight	HC
002	14-Oct	0830	78	33.16	-118.52	Southern CA Bight	SD
003	14-Oct	2124	117	33.37	-118.66	Southern CA Bight	TT
003	14-Oct	2136	117	33.36	-118.66	Southern CA Bight	TT
003	14-Oct	2205	117	33.37	-118.67	Southern CA Bight	TT
004	15-Oct	0739	193	34.27	-119.57	Santa Barbara Basin	SG
005	15-Oct	0855	190	34.24	-119.71	Santa Barbara Basin	SG
005	15-Oct	0947	200	34.25	-119.75	Santa Barbara Basin	TT
005	15-Oct	1010	203	34.22	-119.74	Santa Barbara Basin	TT
005	15-Oct	1116	205	34.24	-119.76	Santa Barbara Basin	TT
006	15-Oct	1400	229	34.31	-120.04	Santa Barbara Basin	HC
006	15-Oct	1310	229	34.31	-120.05	Santa Barbara Basin	SG
007	15-Oct	1718	231	34.25	-120.33	Santa Barbara Basin	SG
008	15-Oct	1948	242	34.26	-120.52	Santa Barbara Basin	SG
009	17-Oct	0750	275	33.41	-120.76	Offshore CA Current	HC
010	17-Oct	1628	313	32.80	-121.13	Offshore CA Current	CTD
011	17-Oct	2132	329	32.53	-121.29	Offshore CA Current	NT
012	18-Oct	0000	333	32.46	-121.30	Offshore CA Current	CTD
013	18-Oct	0900	367	32.49	-121.28	Offshore CA Current	HC
013	18-Oct	0900	367	32.49	-121.28	Offshore CA Current	SD
014	18-Oct	2035	308	31.46	-122.24	Offshore CA Current	1MN
014	18-Oct	2158	408	31.42	-122.20	Offshore CA Current	CTD
014	18-Oct	2040	408	31.45	-122.24	Offshore CA Current	NT
015	19-Oct	0012	410	31.38	-122.21	Offshore CA Current	1MN
015	19-Oct	0018	410	31.38	-122.21	Offshore CA Current	NT
016	19-Oct	0358	420	31.20	-122.31	Offshore CA Current	1MN
016	19-Oct	0403	420	31.21	-122.33	Offshore CA Current	NT
017	19-Oct	1802	465	30.68	-122.75	Jasper Seamount	1MN
017	19-Oct	1827	465	30.68	-122.73	Jasper Seamount	2MN
017	19-Oct	1630	464	30.69	-122.79	Jasper Seamount	HC
017	19-Oct	1845	465	30.68	-122.73	Jasper Seamount	NT
018	20-Oct	0355	492	30.58	-122.65	Jasper Seamount	CTD
019	20-Oct	1143	516	30.47	-122.70	Jasper Seamount	HC
020	20-Oct	2246	546	30.42	-122.75	Jasper Seamount	1MN
020	20-Oct	2108	546	30.41	-122.74	Jasper Seamount	2MN
020	20-Oct	2321	548	30.42	-122.70	Jasper Seamount	CTD
020	20-Oct	2127	547	30.41	-122.73	Jasper Seamount	NT
021	21-Oct	0246	565	30.35	-122.67	Jasper Seamount	HC
022	21-Oct	2115	595	29.96	-122.61	Offshore CA Current	TT
022	21-Oct	2138	596	29.96	-122.61	Offshore CA Current	TT
022	21-Oct	2241	597	29.96	-122.60	Offshore CA Current	TT
023	22-Oct	0112	598	29.95	-122.57	Offshore CA Current	NT
024	22-Oct	0918	615	29.60	-122.50	Offshore CA Current	CTD
024	22-Oct	0918	615	29.60	-122.50	Offshore CA Current	SD
024	22-Oct	1113	616	29.57	-122.53	Offshore CA Current	TT
024	22-Oct	1132	617	29.56	-122.53	Offshore CA Current	TT

024	22-Oct	1204	618	29.54	-122.53	Offshore CA Current	TT
025	23-Oct	0020	620	29.46	-122.57	Offshore CA Current	NT
026	23-Oct	0900	621	29.37	-122.65	Offshore CA Current	HC
026	23-Oct	0900	621	29.37	-122.65	Offshore CA Current	SD
027	23-Oct	2028	661	29.35	-122.09	Offshore CA Current	1MN
027	23-Oct	2033	661	29.35	-122.09	Offshore CA Current	NT
028	24-Oct	0004	689	29.32	-121.59	Offshore CA Current	1MN
028	24-Oct	0008	689	29.32	-121.59	Offshore CA Current	NT
029	24-Oct	0428	704	29.32	-121.32	Offshore CA Current	1MN
029	24-Oct	0434	704	29.32	-121.32	Offshore CA Current	NT
030	24-Oct	2041	772	29.31	-119.92	Isla de Guadalupe	CTD
031	26-Oct	0102	904	29.22	-118.40	Isla de Guadalupe	HC
032	26-Oct	0347	908	29.26	-118.41	Isla de Guadalupe	1MN
032	26-Oct	0354	909	29.25	-118.40	Isla de Guadalupe	2MN
032	26-Oct	0413	909	29.26	-118.39	Isla de Guadalupe	NT
033	26-Oct	0731	925	29.14	-118.42	Isla de Guadalupe	CTD
034	26-Oct	0948	936	29.03	-118.36	Isla de Guadalupe	HC
035	26-Oct	1211	945	28.93	-118.38	Isla de Guadalupe	CTD
036	26-Oct	1728	958	28.78	-118.33	Isla de Guadalupe	HC
037	26-Oct	2016	959	28.75	-118.28	Isla de Guadalupe	1MN
037	26-Oct	2037	959	28.74	-118.30	Isla de Guadalupe	2MN
037	26-Oct	2056	959	28.74	-118.26	Isla de Guadalupe	NT
038	27-Oct	1013	1028	28.18	-117.21	Offshore CA Current	TT
038	27-Oct	1028	1028	28.18	-117.21	Offshore CA Current	TT
038	27-Oct	1059	1029	28.18	117.21	Offshore CA Current	TT
039	27-Oct	2014	1064	27.94	116.64	Offshore CA Current	TT
039	27-Oct	2030	1064	27.93	116.64	Offshore CA Current	TT
039	27-Oct	2107	1064	27.93	116.62	Offshore CA Current	TT
040	28-Oct	0007	1074	27.80	-116.42	Offshore CA Current	NT
041	28-Oct	0106	1079	27.79	-116.41	Offshore CA Current	CTD
042	28-Oct	1914	1149	27.30	-115.02	Southern Baja	HC
043	28-Oct	2357	1162	27.13	-114.78	Southern Baja	NT
044	29-Oct	1005	1191	26.76	-114.36	Southern Baja	CTD
044	29-Oct	1113	1191	26.76	114.35	Southern Baja	TT
044	29-Oct	1127	1191	26.76	114.34	Southern Baja	TT
044	29-Oct	1155	1192	26.78	114.33	Southern Baja	TT
045	29-Oct	2115	1224	26.41	113.95	Southern Baja	TT
045	29-Oct	2129	1125	26.41	113.94	Southern Baja	TT
045	29-Oct	2202	1225	26.41	113.93	Southern Baja	TT
046	30-Oct	1436	1290	25.68	-113.10	Soledad Basin	SG
047	30-Oct	2008	1301	25.66	-112.85	Soledad Basin	SG
048	30-Oct	2213	1306	25.58	-112.85	Soledad Basin	NT
048	30-Oct	2140	1306	25.58	-112.85	Soledad Basin	SG
049	31-Oct	0425	1328	25.32	-112.72	Soledad Basin	GC
049	31-Oct	0620	1327	25.32	-112.73	Soledad Basin	HC
049	31-Oct	0620	1327	25.32	-112.73	Soledad Basin	SD
049	31-Oct	0347	1327	25.24	-112.72	Soledad Basin	SG
050	31-Oct	1044	1334	25.19	-112.76	Soledad Basin	CTD
050	31-Oct	1013	1334	25.19	-112.76	Soledad Basin	SG
051	31-Oct	1304	1340	25.13	-112.76	Soledad Basin	SG
052	31-Oct	1652	1354	25.11	-112.47	Soledad Basin	SG

053	31-Oct	2330	1397	24.71	-113.03	Offshore Southern Baja	HC
054	1-Nov	1023	1434	24.14	-112.78	Offshore Southern Baja	CTD
054	1-Nov	1023	1434	24.14	-112.78	Offshore Southern Baja	SD
055	2-Nov	0:13	1486	23.35	-112.44	Offshore Southern Baja	NT
056	2-Nov	0853	1506	23.01	-112.32	Offshore Southern Baja	CTD
057	2-Nov	2325	1631	21.06	-111.64	Offshore Southern Baja	CTD
058	3-Nov	0615	1682	21.43	-110.90	Offshore Southern Baja	CTD
059	3-Nov	1321	1739	21.96	-110.13	Offshore Southern Baja	CTD
060	3-Nov	2040	1794	22.44	-109.40	Offshore Southern Baja	1MN
060	3-Nov	2140	1795	22.45	-109.41	Offshore Southern Baja	CTD
060	3-Nov	20:46	1794	22.45	-109.39	Offshore Southern Baja	NT
061	4-Nov	0112	1819	22.84	-109.46	Offshore Southern Baja	1MN
061	4-Nov	0113	1819	22.85	-109.47	Offshore Southern Baja	NT
062	4-Nov	0418	1841	23.15	-109.29	Offshore Southern Baja	1MN
062	4-Nov	0425	1841	23.15	-109.29	Offshore Southern Baja	NT
063	4-Nov	2230	1959	24.44	-109.71	Cerralvo Seamount	CTD
064	5-Nov	0346	1976	24.34	-109.65	Cerralvo Seamount	1MN
064	5-Nov	0403	1976	24.34	-109.64	Cerralvo Seamount	2MN
064	5-Nov	1014	1997	24.36	-109.67	Cerralvo Seamount	CTD
064	5-Nov	0416	1976	24.34	-109.64	Cerralvo Seamount	NT
065	5-Nov	1345	2012	24.29	-109.59	Cerralvo Seamount	CTD
066	5-Nov	1714	2025	24.22	-109.58	Cerralvo Seamount	1MN
066	5-Nov	1720	2026	24.22	-109.58	Cerralvo Seamount	2MN
066	5-Nov	1635	2025	24.22	-109.60	Cerralvo Seamount	CTD
066	5-Nov	1729	2026	24.22	-109.58	Cerralvo Seamount	NT
067	5-Nov	2105	2044	24.09	-109.58	Cerralvo Seamount	CTD
068	10-Nov	1635	2170	24.57	-110.61	Gulf of CA	CTD
069	10-Nov	2138	2180	24.65	110.54	Gulf of CA	TT
069	10-Nov	2149	2180	24.65	110.54	Gulf of CA	TT
069	10-Nov	2212	2180	24.64	110.53	Gulf of CA	TT
070	11-Nov	0129	2187	24.70	-110.41	Gulf of CA	NT
071	11-Nov	1013	2220	24.94	109.90	Gulf of CA	TT
071	11-Nov	1035	2221	24.95	109.89	Gulf of CA	TT
071	11-Nov	1110	2221	24.96	109.88	Gulf of CA	TT
072	11-Nov	2120	2236	25.14	-109.66	Gulf of CA	CTD
073	12-Nov	0019	2236	25.13	-109.64	Gulf of CA	NT
074	12-Nov	0609	2237	25.11	-109.59	Gulf of CA	1MN
074	12-Nov	0609	2237	25.11	-109.60	Gulf of CA	1MN
075	12-Nov	2013	2247	25.21	-109.69	Gulf of CA	1MN
075	12-Nov	2023	2247	25.21	-109.69	Gulf of CA	NT
076	13-Nov	0012	2247	25.21	-109.71	Gulf of CA	1MN
076	13-Nov	0017	2247	25.21	-109.71	Gulf of CA	NT
077	13-Nov	0400	2249	25.21	-109.73	Gulf of CA	1MN
077	13-Nov	0408	2249	25.21	-109.73	Gulf of CA	NT
078	13-Nov	1106	2269	25.24	-109.36	Gulf of CA	CTD
078	13-Nov	1106	2269	25.24	-109.36	Gulf of CA	SD
079	14-Nov	0004	2328	25.27	-110.06	Gulf of CA	NT
080	14-Nov	0614	2357	25.26	-110.54	Gulf of CA	1MN
080	14-Nov	0627	2357	25.26	-110.54	Gulf of CA	1MN
081	14-Nov	1115	2369	25.34	-110.39	Gulf of CA	CTD
081	14-Nov	1115	2369	25.34	-110.39	Gulf of CA	SD

082	15-Nov	0003	2387	25.01	-110.20	Gulf of CA	NT
083	15-Nov	0616	2442	24.37	-109.64	Gulf of CA	1MN
083	15-Nov	0624	2442	24.37	-109.64	Gulf of CA	1MN
084	16-Nov	0000	2518	23.15	-108.82	Gulf of CA	NT
085	16-Nov	0558	2567	22.57	-108.36	Gulf of CA	1MN
085	16-Nov	0603	2567	22.57	-108.36	Gulf of CA	1MN
086	16-Nov	0000	2577	22.48	-108.20	Gulf of CA	CTD
088	17-Nov	0000	2664	21.09	-108.54	Gulf of CA	1MN
089	18-Nov	0007	2718	20.86	-107.91	Gulf of CA	NT
090	18-Nov	0610	2744	20.81	-107.46	Gulf of CA	1MN
091	19-Nov	0025	2803	20.58	-106.50	Gulf of CA	NT

Duplicate station numbers refer to different oceanographic equipment that was either deployed concurrently in the same location or was deployed sequentially in the same general location once the vessel was hove to. The General Location for stations has been categorized by position relative to nearest island (Isla de Guadalupe), seamount (Jasper or Cerralvo), ocean basin (Santa Barbara or Soledad) or oceanic biome (Southern California Bight, California Current, Southern Baja and Gulf of California). Abbreviations for type of oceanographic equipment deployed: NT – neuston tow, PN – phytoplankton net, MN – meter net (either 1 or 2 m diameter), CTD – conductivity, temperature and depth profiler, HC – hydrocast with 12 Niskin bottles, SG – shipek grab, and TT – Tucker trawl.

Figure 2a. Surface plots of temperature and salinity for S207. Recognized water masses were the California Current moving south, North Pacific Equatorial Water (NPEW) moving north, the Gulf of California Water circulating within the basin and a large transition region of mixed water masses with possible influences of North Pacific Central Water (NPCW) intruding from the west.

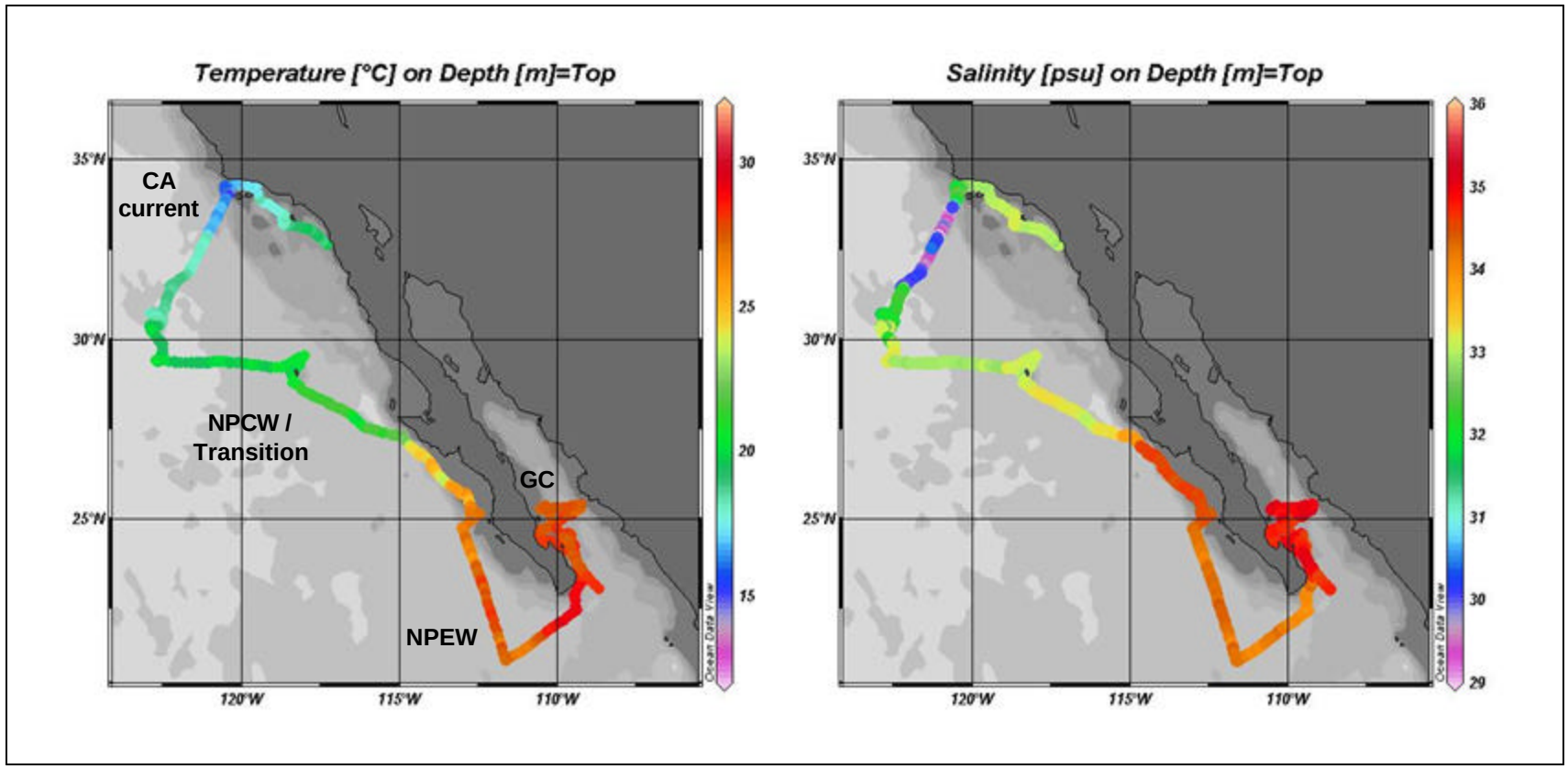


Figure 2b. Surface plots of density and fluorescence for S207. Recognized water masses were the California Current moving south, North Pacific Equatorial Water (NPEW) moving north, the Gulf of California Water circulating within the basin and a large transition region of mixed water masses with possible influences of North Pacific Central Water (NPCW) intruding from the west.

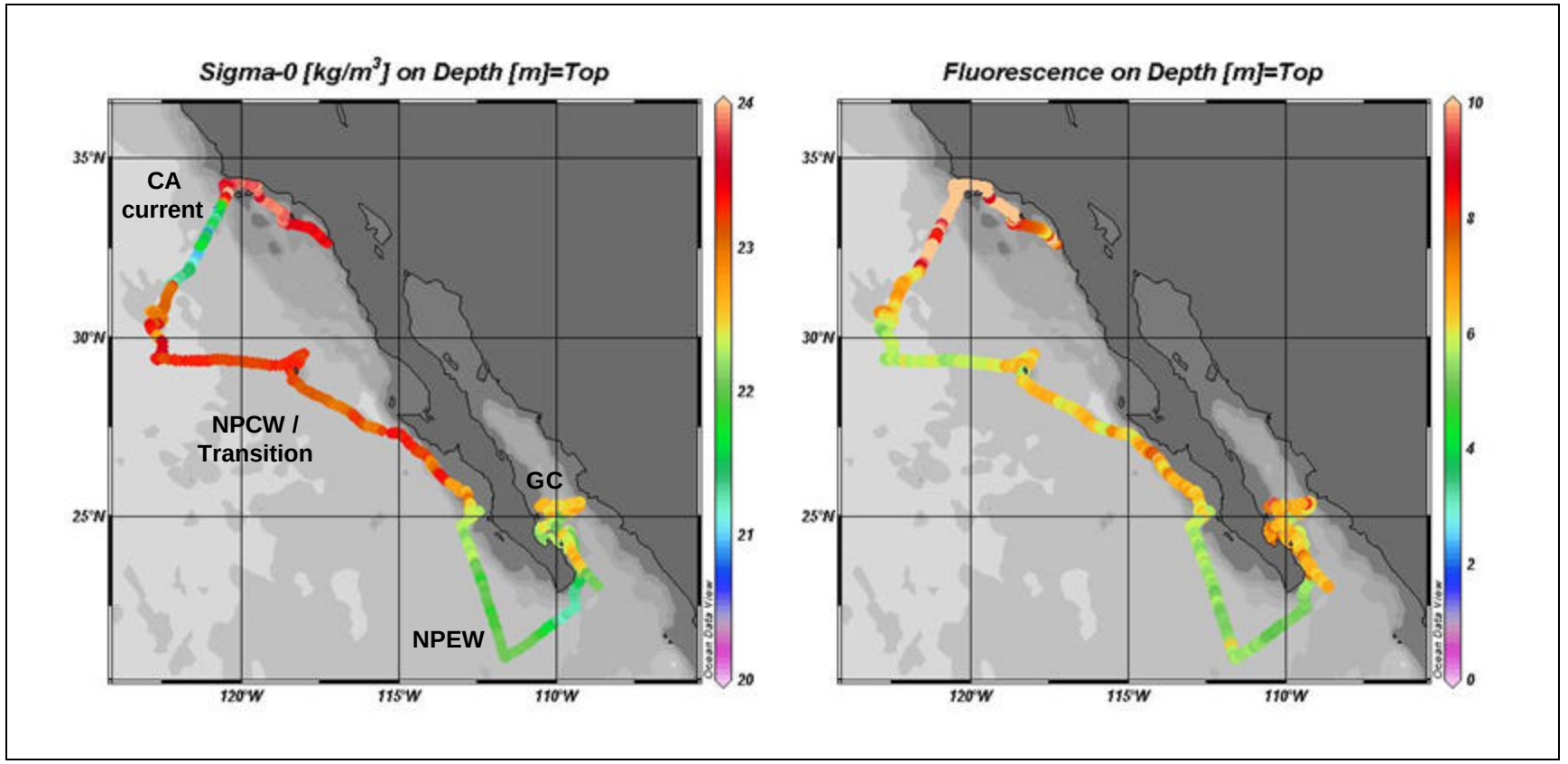


Table 4. CTD station data for S207.

Station # (S207-)	Date (2006)	Local Time (+5 GMT)	Cast Depth (m)	Locale
002	14-Oct	0830	1180	Southern CA Bight
006	15-Oct	1400	535	Santa Barbara Basin
009	17-Oct	0750	590	Offshore CA Current
010	17-Oct	1628	1435	Offshore CA Current
012	18-Oct	0000	615	Offshore CA Current
013	18-Oct	0900	655	Offshore CA Current
014	18-Oct	2158	1382	Offshore CA Current
017	19-Oct	1630	920	Jasper Seamount
018	20-Oct	0355	910	Jasper Seamount
019	20-Oct	1143	1482	Jasper Seamount
020	20-Oct	2321	970	Jasper Seamount
021	21-Oct	0246	967	Jasper Seamount
024	22-Oct	0918	1485	Offshore CA Current
026	23-Oct	0900	595	Offshore CA Current
030	24-Oct	2041	1374	Isla de Guadalupe
031	26-Oct	0102	982	Isla de Guadalupe
033	26-Oct	0731	999	Isla de Guadalupe
034	26-Oct	0948	797	Isla de Guadalupe
035	26-Oct	1211	985	Isla de Guadalupe
036	26-Oct	1728	765	Isla de Guadalupe
041	28-Oct	0106	1144	Offshore CA Current
042	28-Oct	1914	615	Southern Baja
044	29-Oct	1005	599	Southern Baja
049	31-Oct	0620	340	Soledad Basin
050	31-Oct	1044	490	Soledad Basin
053	31-Oct	2330	680	Offshore Southern Baja
054	1-Nov	1023	646	Offshore Southern Baja
056	2-Nov	0853	1480	Offshore Southern Baja
057	2-Nov	2325	1470	Offshore Southern Baja

058	3-Nov	0615	601	Offshore Southern Baja
059	3-Nov	1321	1185	Offshore Southern Baja
060	3-Nov	2140	600	Offshore Southern Baja
063	4-Nov	2230	997	Cerralvo Seamount
064	5-Nov	1014	265	Cerralvo Seamount
065	5-Nov	1345	546	Cerralvo Seamount
066	5-Nov	1635	266	Cerralvo Seamount
067	5-Nov	2105	1087	Cerralvo Seamount
068	10-Nov	1635	367	Gulf of CA
072	11-Nov	2120	1495	Gulf of CA
078	13-Nov	1106	1145	Gulf of CA
081	14-Nov	1115	1495	Gulf of CA
086	16-Nov	0000	2500	Gulf of CA

Table 5. Hydrocast station data for S207.

Station # (S207-)	Bottle #	Depth (m)	Temp (oC)	Salinity (ppt)	Density (kg/m^3)	O_2 (ml/l)	PO_4 (µM)	SiO_2 (µM)	NO_3 (µM)	NO_2 (µM)	Chl-*a* (µg/l)	Locale
002	13	0	18.3	32.93	24.00		0.42				0.118	Southern CA Bight
002	12	6	18.5	33.47	24.00	5.64	0.37				0.212	Southern CA Bight
002	11	10	18.4	33.48	24.02	5.66	0.42				0.315	Southern CA Bight
002	10	20	17.5	33.48	24.24	5.72	0.55				0.169	Southern CA Bight
002	9	30	16.4	33.47	24.47	5.89	0.59				0.301	Southern CA Bight
002	8	45	13.1	33.31	25.07	5.26	0.99				0.309	Southern CA Bight
002	7	60	12.4	33.43	25.29	5.08	1.09				0.083	Southern CA Bight
002	6	75	11.5	33.52	25.54	4.52	1.14				0.101	Southern CA Bight
002	5	90	10.5	33.61	25.78	3.81	1.78				0.045	Southern CA Bight
002	4	149	9.4	33.93	26.22	3.14	2.05				0.009	Southern CA Bight
002	3	199	9.1	34.12	26.42	2.24	1.79				0.006	Southern CA Bight
002	2	298	8.2	34.22	26.64	0.99	3.07				0.006	Southern CA Bight
002	1	397	7.5	34.30	26.81	1.07	2.54				0.007	Southern CA Bight
006	13	0	17.1	33.01	24.70		0.50		0.00	BD		Santa Barbara Basin
006	12	25	15.3	33.47	24.70	5.85	0.54		0.44	7.05		Santa Barbara Basin
006	11	50	12.5	33.48	25.30	4.54	1.38		12.34	3.61		Santa Barbara Basin
006	10	100	10.5	33.68	25.80	3.33	2.03		19.83	BD		Santa Barbara Basin
006	9	150	9.8	33.92	26.10	2.59	2.28		24.15	BD		Santa Barbara Basin
006	8	199	9.5	34.06	26.30	2.22	2.34		20.73	BD		Santa Barbara Basin
006	7	249	9.2	34.16	26.40	1.77	2.51		34.37	0.18		Santa Barbara Basin
006	6	298	8.6	34.23	26.60	1.03	3.04		29.31	0.90		Santa Barbara Basin
006	5	348	7.9	34.29	26.70	0.77	3.27		29.14	BD		Santa Barbara Basin
006	4	398	7.4	34.24	26.80	0.65	3.38		41.36	9.21		Santa Barbara Basin
006	3	447	6.8	34.24	26.90	0.52	3.86		32.55	BD		Santa Barbara Basin
006	2	497	6.5	34.24	26.90	0.54	4.19		17.27	BD		Santa Barbara Basin
006	1	523	6.5	34.24	27.00	0.40	4.49		21.99	3.79		Santa Barbara Basin
009	13	0	16.4	29.76	24.50				0.32	1.99		Offshore CA Current
009	12	26	15.9	33.38	24.50	5.72	0.61		0.34	7.95		Offshore CA Current
009	11	49	13.4	33.54	25.20				6.97	20.05		Offshore CA Current
009	10	99	10.4	33.69	25.90	3.29	1.77		15.68	8.67		Offshore CA Current
009	9	150	9.2	33.92	26.20	2.74	2.01		25.68	4.34		Offshore CA Current
009	8	201	8.7	34.06	26.40	2.42	2.34		27.68	1.26		Offshore CA Current
009	7	250	8.3	34.14	26.60	1.78	2.37		23.66	BD		Offshore CA Current

Station # (S207-)	Bottle #	Depth (m)	Temp (oC)	Salinity (ppt)	Density (kg/m^3)	O_2 (ml/l)	PO_4 (µM)	SiO_2 (µM)	NO_3 (µM)	NO_2 (µM)	Chl-*a* (µg/l)	Locale
009	6	299	7.7	34.17	26.70	1.48	2.84		35.78	7.59		Offshore CA Current
009	5	350	7.1	34.19	26.80	1.17	3.14		37.30	BD		Offshore CA Current
009	4	399	7.1	34.26	26.80	0.86	3.13		40.39	9.39		Offshore CA Current
009	3	451	6.5	34.28	26.90	0.68	3.19		41.89	BD		Offshore CA Current
009	2	500	6.1	34.27	27.00	0.98	3.98		41.34	0.54		Offshore CA Current
009	1	549	6.0	34.31	27.00	0.56	6.17		39.43	5.96		Offshore CA Current
013	13	0	17.2	33.29	24.14	2.92	0.63				0.141	Offshore CA Current
013	12	6	17.2	33.29	24.14	2.92	0.62				0.147	Offshore CA Current
013	11	10	17.2	33.29	24.14	3.56	0.60				0.136	Offshore CA Current
013	10	20	17.2	33.29	24.14	3.13	0.79				0.115	Offshore CA Current
013	9	30	17.2	33.29	24.15	5.34	0.39				0.104	Offshore CA Current
013	8	46	14.9	33.26	24.65	5.62	0.23				0.287	Offshore CA Current
013	7	60	13.2	33.28	25.02	5.31	0.99				0.187	Offshore CA Current
013	6	75	12.4	33.45	25.31	4.76	1.21				0.075	Offshore CA Current
013	5	90	11.3	33.49	25.54							Offshore CA Current
013	4	149	8.9	33.83	26.21	3.42	1.37				0.004	Offshore CA Current
013	3	199	8.5	34.03	26.44	2.39	1.57				0.004	Offshore CA Current
013	2	298	7.6	34.14	26.66	1.50	2.04				0.005	Offshore CA Current
013	1	398	6.4	34.19	26.87	0.90	3.05				0.003	Offshore CA Current
017	13	0	18.4	32.26	24.01		0.05	2.26				Jasper Seamount
017	12	25	17.9	33.35	24.01		BD	2.34			0.134	Jasper Seamount
017	11	50	16.9	33.36	24.28		0.29	1.58			0.124	Jasper Seamount
017	10	74	13.8	33.27	24.87		0.12	4.14			0.243	Jasper Seamount
017	9	99	12.1	33.43	25.35		BD				0.116	Jasper Seamount
017	8	149	9.9	33.70	25.95		1.65	15.91			0.010	Jasper Seamount
017	7	199	8.8	33.97	26.34		1.31	20.53			0.003	Jasper Seamount
017	6	248	8.0	34.03	26.51		1.45				0.002	Jasper Seamount
017	5	298	7.2	34.06	26.64		1.92	26.41				Jasper Seamount
017	4	347	6.6	34.05	26.72		2.36	25.27				Jasper Seamount
017	3	398	6.2	34.09	26.81		2.33	21.51				Jasper Seamount
017	2	497	5.6	34.22	26.98		2.57	42.57				Jasper Seamount
017	1	595	5.1	34.30	27.11		5.00	26.82				Jasper Seamount
019	13	0	18.0	33.22	23.90		-0.01	2.54			0.056	Jasper Seamount
019	12	25	18.0	33.22	23.90		0.56	3.55			0.040	Jasper Seamount
019	11	50	15.6	33.18	24.40		0.22	2.90			0.090	Jasper Seamount

Station # (S207-)	Bottle #	Depth (m)	Temp (oC)	Salinity (ppt)	Density (kg/m^3)	O_2 (ml/l)	PO_4 (µM)	SiO_2 (µM)	NO_3 (µM)	NO_2 (µM)	Chl-*a* (µg/l)	Locale
019	10	76	14.6	33.39	24.80		0.11	2.95			0.215	Jasper Seamount
019	9	99	13.5	33.51	25.10		0.88	4.05			0.107	Jasper Seamount
019	8	150	10.0	33.59	25.90		0.99	15.20			0.023	Jasper Seamount
019	7	199	9.0	33.88	26.20		1.31	15.42			0.002	Jasper Seamount
019	6	249	8.2	34.03	26.50		1.94	11.04			0.002	Jasper Seamount
019	5	298	7.5	34.09	26.60		2.51	28.09				Jasper Seamount
019	4	348	6.9	34.12	26.70		2.59					Jasper Seamount
019	3	397	6.3	34.11	26.80		2.67	50.01				Jasper Seamount
019	2	497	5.5	34.20	27.00		2.17	24.45				Jasper Seamount
019	1	596	5.2	34.29	27.10		2.86	66.57				Jasper Seamount
021	13	0	18.6	33.32	23.80		0.12	11.92			0.043	Jasper Seamount
021	12	25	18.6	33.32	23.80		0.02	3.08			0.035	Jasper Seamount
021	11	50	18.0	33.32	24.00		0.04	1.53			0.066	Jasper Seamount
021	10	74	14.9	33.27	24.70		0.72	6.94			0.098	Jasper Seamount
021	9	99	13.6	33.42	25.10		0.49	19.59			0.178	Jasper Seamount
021	8	149	10.6	33.57	25.70		1.41	11.20			0.039	Jasper Seamount
021	7	199	9.1	33.84	26.20		1.21	19.59			0.003	Jasper Seamount
021	6	247	8.3	34.01	26.50		1.25	22.04			0.002	Jasper Seamount
021	5	298	7.6	34.06	26.60		1.44	21.63				Jasper Seamount
021	4	347	6.8	34.09	26.70		1.79	48.95				Jasper Seamount
021	3	398	6.4	34.12	26.80		3.24	76.59				Jasper Seamount
021	2	497	5.6	34.19	27.00		3.00	43.44				Jasper Seamount
021	1	596	5.1	34.29	27.10		2.61	45.19				Jasper Seamount
026	13	0	19.0	33.36	23.80		0.56				0.052	Offshore CA Current
026	12	5	19.0	33.36	23.80	4.93	0.51				0.043	Offshore CA Current
026	11	11	18.9	33.36	23.80	4.90	0.46				0.043	Offshore CA Current
026	10	20	18.7	33.30	23.80	5.03	0.37				0.039	Offshore CA Current
026	9	30	18.6	33.29	23.80	5.00	0.32				0.031	Offshore CA Current
026	8	45	18.4	33.30	23.90	5.05	0.33				0.040	Offshore CA Current
026	7	60	17.2	33.65	24.40	5.31	0.33				0.065	Offshore CA Current
026	6	75	16.2	33.58	24.60	5.51	0.27				0.064	Offshore CA Current
026	5	89	14.8	33.45	24.80	5.36	0.40				0.112	Offshore CA Current
026	4	149	10.9	33.54	25.60	4.08	1.20				0.034	Offshore CA Current
026	3	199	9.2	33.83	26.20	3.45	1.87				0.008	Offshore CA Current
026	2	298	7.9	34.10	26.60	1.94	2.23				0.006	Offshore CA Current

Station # (S207-)	Bottle #	Depth (m)	Temp (oC)	Salinity (ppt)	Density (kg/m^3)	O_2 (ml/l)	PO_4 (µM)	SiO_2 (µM)	NO_3 (µM)	NO_2 (µM)	Chl-*a* (µg/l)	Locale
026	1	398	6.6	34.14	26.80	1.25	3.18				0.005	Offshore CA Current
031	13	0	19.8	33.60	23.70						0.063	Isla de Guadalupe
031	12	25	19.8	33.60	23.70						0.072	Isla de Guadalupe
031	11	50	16.2	33.32	24.40						0.128	Isla de Guadalupe
031	10	74	13.8	33.48	25.00						0.090	Isla de Guadalupe
031	9	99	11.2	33.57	25.60						0.077	Isla de Guadalupe
031	8	149	10.1	33.88	26.10						0.008	Isla de Guadalupe
031	7	198	9.0	34.25	26.50							Isla de Guadalupe
031	6	249	9.0	34.25	26.50						0.046	Isla de Guadalupe
031	5	297	8.3	34.25	26.60							Isla de Guadalupe
031	4	347	7.8	34.30	26.70							Isla de Guadalupe
031	3	397	7.0	34.28	26.70							Isla de Guadalupe
031	2	496	6.5	34.37	27.00							Isla de Guadalupe
031	1	586	5.9	34.46	27.10							Isla de Guadalupe
034	13	0	19.9	32.99	23.70		0.40	19.34			0.068	Isla de Guadalupe
034	12	25	19.5	33.46	23.70		0.36	22.17			0.052	Isla de Guadalupe
034	11	50	15.7	33.24	24.50		0.47	21.79			0.081	Isla de Guadalupe
034	10	75	14.1	33.31	24.90		0.59	18.59			0.146	Isla de Guadalupe
034	9	99	12.0	33.46	25.40		1.30	28.38			0.010	Isla de Guadalupe
034	8	149	9.6	33.84	26.10		2.05	38.74			0.009	Isla de Guadalupe
034	7	199	9.3	34.09	26.40		2.51	47.22			0.005	Isla de Guadalupe
034	6	248	8.9	34.15	26.50		2.63	48.06			0.005	Isla de Guadalupe
034	5	298	8.2	34.15	26.60		3.02	52.49				Isla de Guadalupe
034	4	348	7.8	34.23	26.70		3.24	60.96				Isla de Guadalupe
034	3	397	7.2	34.22	26.80		3.38	75.75				Isla de Guadalupe
034	2	497	6.6	34.31	26.90		3.11	62.66				Isla de Guadalupe
034	1	597	6.0	34.38	27.10		3.69	54.84				Isla de Guadalupe
036	13	0	20.0	33.61	27.10		0.41	21.70			0.083	Isla de Guadalupe
036	12	24	20.0	33.61	27.10		0.40	22.26			0.105	Isla de Guadalupe
036	11	50	16.1	33.24	26.99		0.42	20.47			0.324	Isla de Guadalupe
036	10	74	14.2	33.43	26.84		0.59	26.22			0.195	Isla de Guadalupe
036	9	99	11.8	33.50	26.75		1.10	27.82			0.131	Isla de Guadalupe
036	8	149	9.9	33.87	26.65		2.24	44.58			0.007	Isla de Guadalupe
036	7	199	9.3	34.16	26.53		2.72	45.33			0.004	Isla de Guadalupe
036	6	248	8.5	34.14	26.42		2.73	59.36			0.003	Isla de Guadalupe

Station # (S207-)	Bottle #	Depth (m)	Temp (oC)	Salinity (ppt)	Density (kg/m^3)	O_2 (ml/l)	PO_4 (µM)	SiO_2 (µM)	NO_3 (µM)	NO_2 (µM)	Chl-*a* (µg/l)	Locale
036	5	298	7.8	34.17	26.09		3.05	66.05				Isla de Guadalupe
036	4	349	7.6	34.24	25.47		3.47	62.56				Isla de Guadalupe
036	3	397	6.9	34.25	24.93		3.60	79.61				Isla de Guadalupe
036	2	497	6.1	34.29	24.38		3.98	79.14				Isla de Guadalupe
036	1	595	5.8	34.39	23.71		4.14	93.64				Isla de Guadalupe
042	13	0	21.6	33.83	23.44		0.58				0.063	Southern Baja
042	12	5	21.6	33.83	23.44	5.01	0.51				0.069	Southern Baja
042	11	10	21.4	33.86	23.52	5.20	0.60				0.075	Southern Baja
042	10	20	21.1	33.84	23.59	4.85	0.61				0.176	Southern Baja
042	9	30	21.0	33.82	23.61	4.82	0.67				0.169	Southern Baja
042	8	45	19.1	33.68	23.98	5.19	0.58				0.240	Southern Baja
042	7	60	15.7	33.49	24.65	5.07	0.77				0.151	Southern Baja
042	6	75	14.7	33.48	24.86	4.81	1.00				0.113	Southern Baja
042	5	90	13.2	33.53	25.22	4.46	1.14				0.061	Southern Baja
042	4	149	13.1	34.30	25.84	1.56	3.13				0.014	Southern Baja
042	3	199	12.2	34.67	26.30	0.50	3.61				0.012	Southern Baja
042	2	298	10.4	34.55	26.54	0.54	3.67				0.037	Southern Baja
042	1	397	8.1	34.39	26.78	0.78	3.57				0.007	Southern Baja
049	13	0	26.7	34.52	22.57		0.68		0.58	BD		Soledad Basin
049	12	25	26.3	34.51	22.57	2.96	0.77		0.31	BD		Soledad Basin
049	11	50	20.7	34.23	23.99	2.60	1.38		7.94	22.04		Soledad Basin
049	10	100	15.4	34.50	25.49	0.50	3.02		26.18	9.03		Soledad Basin
049	9	149	13.9	34.67	25.49	0.89	3.84		31.15	BD		Soledad Basin
049	8	199	12.2	34.69	25.95	0.35	4.38		26.27	23.85		Soledad Basin
049	7	249	11.5	34.68	26.31	0.21	4.36		30.38	3.43		Soledad Basin
049	6	298	11.0	34.64	26.44	0.36	4.04		17.87	9.21		Soledad Basin
049	5	320	11.0	34.64	26.50	0.42	4.21		28.62	2.53		Soledad Basin
049	4	320	11.0	34.64	26.50	0.54	4.23		25.91	BD		Soledad Basin
049	3	320	11.0	34.64	26.50	0.56	4.07		30.94	4.88		Soledad Basin
049	2	321	11.0	34.64	26.51	0.42	4.26		29.95	1.99		Soledad Basin
049	1	322	11.0	34.64	26.51	-0.06	4.37		32.99	BD		Soledad Basin
053	13	0	26.3	34.46	22.53		0.61		0.29		0.103	Soledad Basin
053	12	11	26.3	34.46	22.53	4.63	0.74		0.45	BD	0.075	Soledad Basin
053	11	25	26.2	34.45	22.56	4.60	0.64		0.07	BD	0.073	Soledad Basin
053	10	49	18.6	33.94	24.33	4.75	1.06		1.17	BD	0.439	Soledad Basin

Station # (S207-)	Bottle #	Depth (m)	Temp (oC)	Salinity (ppt)	Density (kg/m^3)	O_2 (ml/l)	PO_4 (µM)	SiO_2 (µM)	NO_3 (µM)	NO_2 (µM)	Chl-*a* (µg/l)	Locale
053	9	74	15.1	34.30	25.40	1.78	2.48		21.24	1.81	0.080	Soledad Basin
053	8	100	14.3	34.61	25.82	1.10	3.30		32.06	B D	0.034	Soledad Basin
053	7	124	12.2	34.28	26.01	1.39	3.06		22.32	B D	0.013	Soledad Basin
053	6	149	12.0	34.68	26.36	1.20			32.56		0.008	Soledad Basin
053	5	199	12.0	34.68	26.36	1.90	3.77		33.92	BD	0.008	Soledad Basin
053	4	249	11.4	34.70	26.48	0.24	3.91		35.65	BD		Soledad Basin
053	3	348	9.9	34.60	26.67	0.26	4.25		27.14	BD		Soledad Basin
053	2	446	8.6	34.55	26.83	0.51	3.75		38.11	3.25		Soledad Basin
053	1	547	7.3	34.48	26.97	0.66	4.73		32.94	0.36		Soledad Basin
063	13	0	28.3	34.92	22.37		0.76	18.87			0.103	Cerralvo Seamount
063	12	10	27.9	34.94	22.37		0.78	8.14			0.101	Cerralvo Seamount
063	11	25	27.9	34.94	22.39		0.83	15.77			0.103	Cerralvo Seamount
063	10	50	23.2	34.95	23.84		2.21	33.37			0.188	Cerralvo Seamount
063	9	75	17.1	34.21	24.90		2.32	34.60			0.204	Cerralvo Seamount
063	8	100	15.2	34.61	25.62		3.09	30.17			0.127	Cerralvo Seamount
063	7	124	14.0	34.71	25.97		3.73	48.44			0.038	Cerralvo Seamount
063	6	149	13.6	34.84	26.16		3.87	40.53			0.016	Cerralvo Seamount
063	5	199	12.6	34.82	26.34		3.91	52.96			0.009	Cerralvo Seamount
063	4	249	11.8	34.76	26.45		3.72	61.15			0.010	Cerralvo Seamount
063	3	298	11.0	34.72	26.59		3.78	60.96			0.006	Cerralvo Seamount
063	2	348	9.8	34.64	26.71		4.07	68.78				Cerralvo Seamount
063	1	447	8.7	34.59	26.86		4.04	71.13				Cerralvo Seamount
065	13	0	27.7	34.50	22.11		0.62	21.79			0.086	Cerralvo Seamount
065	12	10	27.7	34.50	22.11		0.80	19.44			0.160	Cerralvo Seamount
065	11	25	27.5	34.49	22.17		0.96	21.04			0.190	Cerralvo Seamount
065	10	50	20.2	34.49	24.29		2.01	27.73			0.361	Cerralvo Seamount
065	9	75	16.1	34.71	25.50		3.17	39.78			0.035	Cerralvo Seamount
065	8	100	14.9	34.88	25.90		3.84	50.32			0.010	Cerralvo Seamount
065	7	125	14.0	34.83	26.06		3.87	51.27			0.009	Cerralvo Seamount
065	6	150	13.3	34.77	26.15		3.66	49.29			0.011	Cerralvo Seamount
065	5	200	12.6	34.81	26.32		3.85	54.18			0.006	Cerralvo Seamount
065	4	250	12.0	34.76	26.40		4.07	54.56			0.007	Cerralvo Seamount
065	3	300	11.0	34.70	26.55		4.20	57.57				Cerralvo Seamount
065	2	350	10.2	34.65	26.65		4.14	59.46				Cerralvo Seamount
065	1	450	8.8	34.59	26.84		4.40	67.18				Cerralvo Seamount

Station # (S207-)	Bottle #	Depth (m)	Temp (oC)	Salinity (ppt)	Density (kg/m^3)	O_2 (ml/l)	PO_4 (µM)	SiO_2 (µM)	NO_3 (µM)	NO_2 (µM)	Chl-*a* (µg/l)	Locale
067	13	0	27.6	34.52	22.17		0.64	18.97			0.152	Cerralvo Seamount
067	12	11	27.6	34.52	22.17		0.71	19.06			0.105	Cerralvo Seamount
067	11	26	25.7	34.73	22.93		1.28	20.66			2.940	Cerralvo Seamount
067	10	50	20.1	34.43	24.31		1.93	32.72			0.013	Cerralvo Seamount
067	9	75	17.6	34.87	25.27		2.65	44.96			0.087	Cerralvo Seamount
067	8	100	15.7	34.87	25.72		3.22	49.48			0.018	Cerralvo Seamount
067	7	125	14.6	34.88	25.97		3.28	49.76			0.012	Cerralvo Seamount
067	6	150	13.6	34.82	26.15		3.26	53.62			0.009	Cerralvo Seamount
067	5	200	12.1	34.78	26.40		2.98	61.81			0.008	Cerralvo Seamount
067	4	251	11.3	34.69	26.50		2.83	57.10			0.012	Cerralvo Seamount
067	3	301	10.7	34.68	26.58		2.47	58.05				Cerralvo Seamount
067	2	350	9.8	34.61	26.69		2.42	63.69				Cerralvo Seamount
067	1	450	8.6	34.57	26.89		2.89	74.90				Cerralvo Seamount

Water samples were collected in 2.5 liter Niskin bottles deployed on a self-contained carousel system with a SBE-019Plus CTD sensor (Seabird Instruments, Inc.). Dissolved oxygen (O_2) concentrations were determined chemically by Winkler titration. Phosphate (PO_4), silicate (SiO_2), nitrate (NO_3) and nitrite (NO_2) levels were measured by colorimetric analysis with an Ocean Optics Chem2000 digital spectrophotometer and chlorophyll-a (Chl-a) concentrations were determined with a Turner Designs Model 10-AU Fluorometer following methods outlined in Parsons, Maita and Lalli (1984; *A Manual of Chemical and Biological Methods for Seawater Analysis*, Pergamon Press). Chlorophyll-*a* samples were filtered through 0.45 µm glass fiber filters. A blank space indicates that no sample was collected for that analysis. Sample concentrations below detectable limits are indicated as "BD".

Figure 3. Temperature, salinity and sound velocity cross-section plots for S207. Distance (km) along x-axis follows the cruise track from San Diego in the north to Puerto Vallarta in the south. Oceanographic features identified: the California Current can be observed as a cool (15-20 ^{o}C), low salinity (33-33.5 psu) surface water mass in the northern portion of the cruise track. Remnants of the California Current subduct beneath more saline (~34.25 psu) but warmer (20-25 ^{o}C) waters to the south. The prominent sub-surface, salinity maximum layer (34.6-34.8 psu) represents North Pacific Equatorial Water being transported north with the California Under-Current. The colder waters (~5 ^{o}C) beneath the California Current support a shallow sound speed minimum (1480 m/s). Data interpolation by VG Gridding in ODV, 90 x-scale and 20 y-scale.

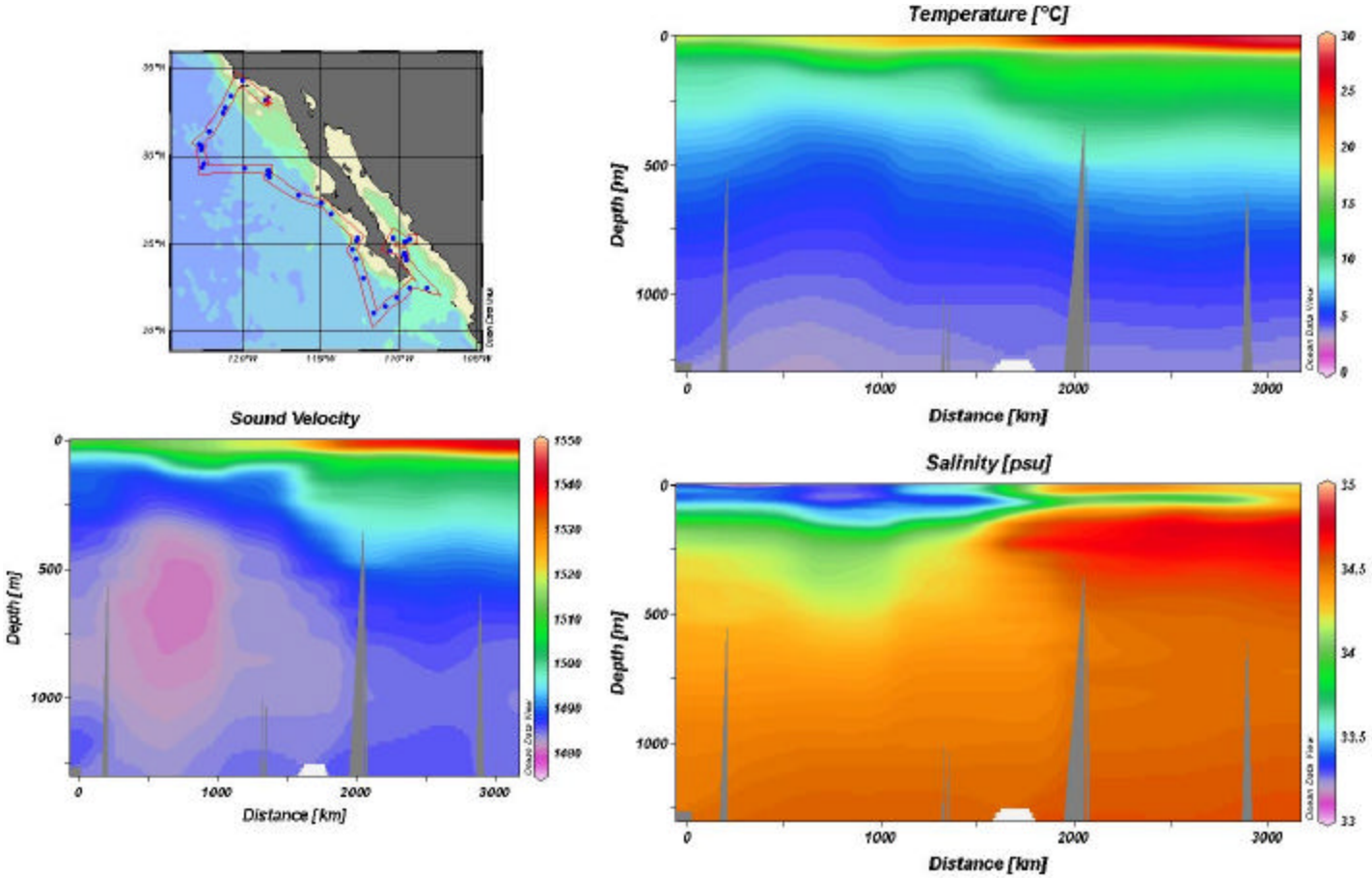
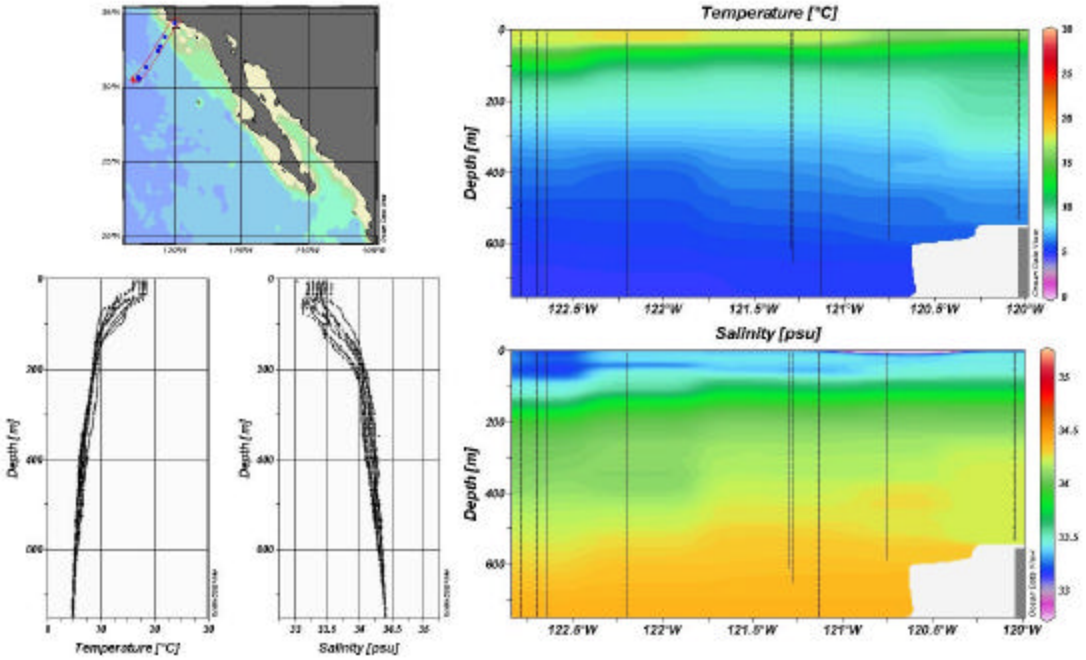


Figure 4 a-b. Temperature, salinity profiles and cross-section plots for a) northern and b) southern transects of the California Current during S207. Note temperature and salinity scales have changed from Figure 3. Location and depth of CTD casts are shown by dashed lines in cross-section plots. Depth scale has been limited to upper 750m to emphasize surface features, though CTD casts frequently reached 1000 meters or more. Data interpolation by VG Gridding in ODV, 90 x-scale and 20 y-scale.

a)



b)

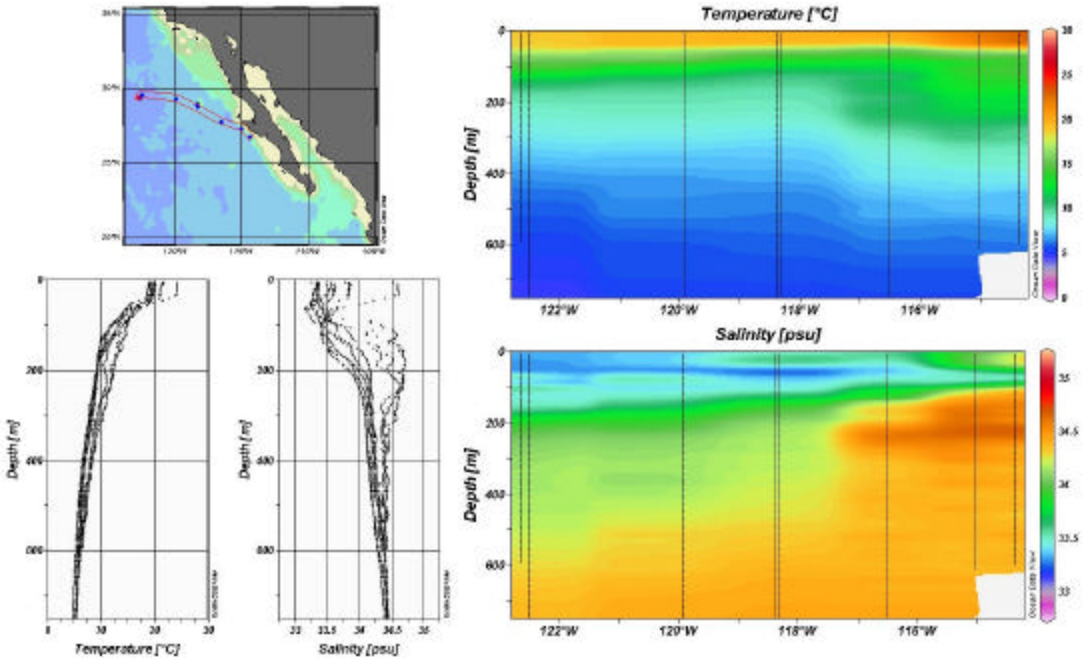
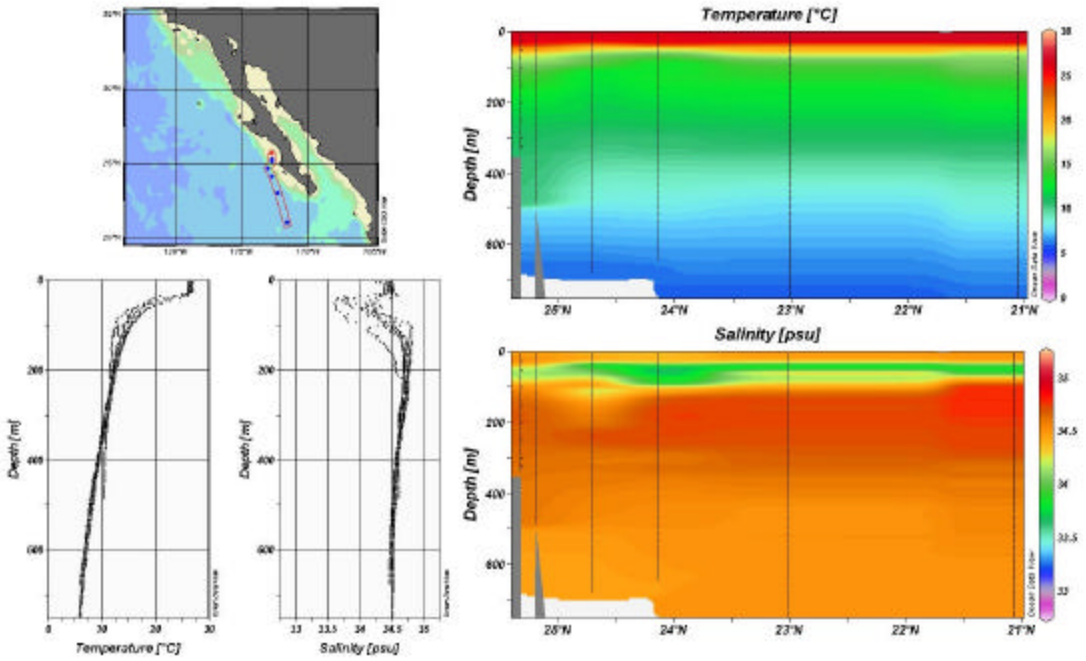


Figure 4 c-d. Temperature, salinity profiles and cross-section plots for c) offshore southern Baja and d) North Pacific Equatorial Water transects during S207. Note temperature and salinity scales have changed from Figure 3. Location and depth of CTD casts are shown by dashed lines in cross-section plots. Depth scale has been limited to upper 750m to emphasis surface features, though CTD casts frequently reached 1000 meters or more. Data interpolation by VG Gridding in ODV, 90 x-scale and 20 y-scale.

c)



d)

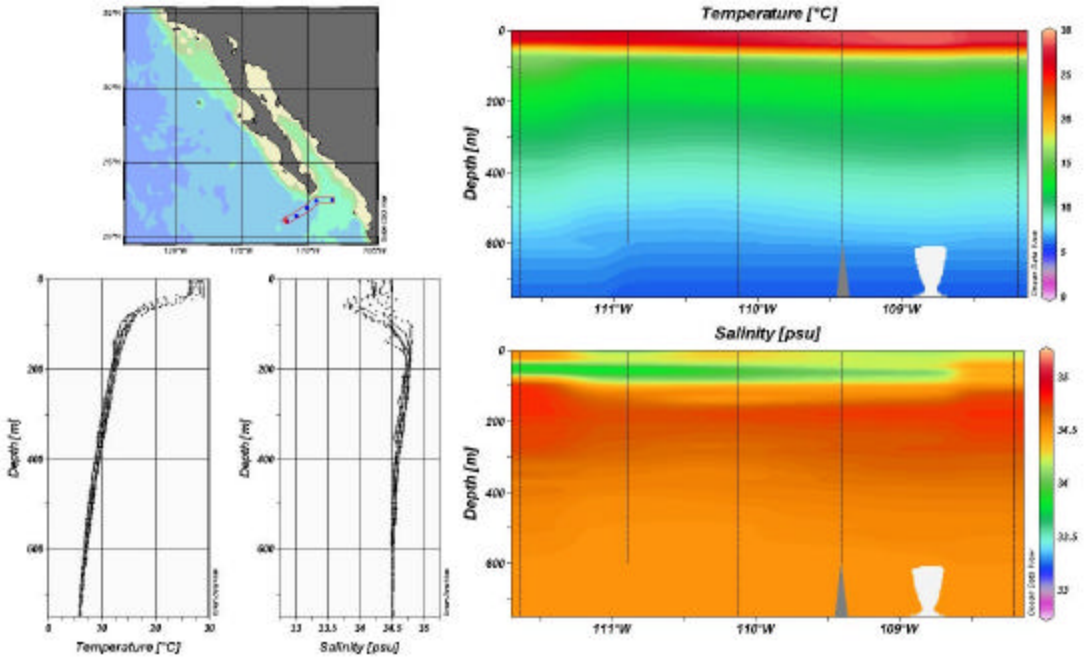


Figure 4 e. Temperature, salinity profiles and cross-section plots for the Gulf of California transect during S207. Note temperature and salinity scales have changed from Figure 3. Location and depth of CTD casts are shown by dashed lines in cross-section plots. Depth scale has been limited to upper 750m to emphasis surface features, though CTD casts frequently reached 1000 meters or more. Data interpolation by VG Gridding in ODV, 90 x-scale and 20 y-scale.

e)

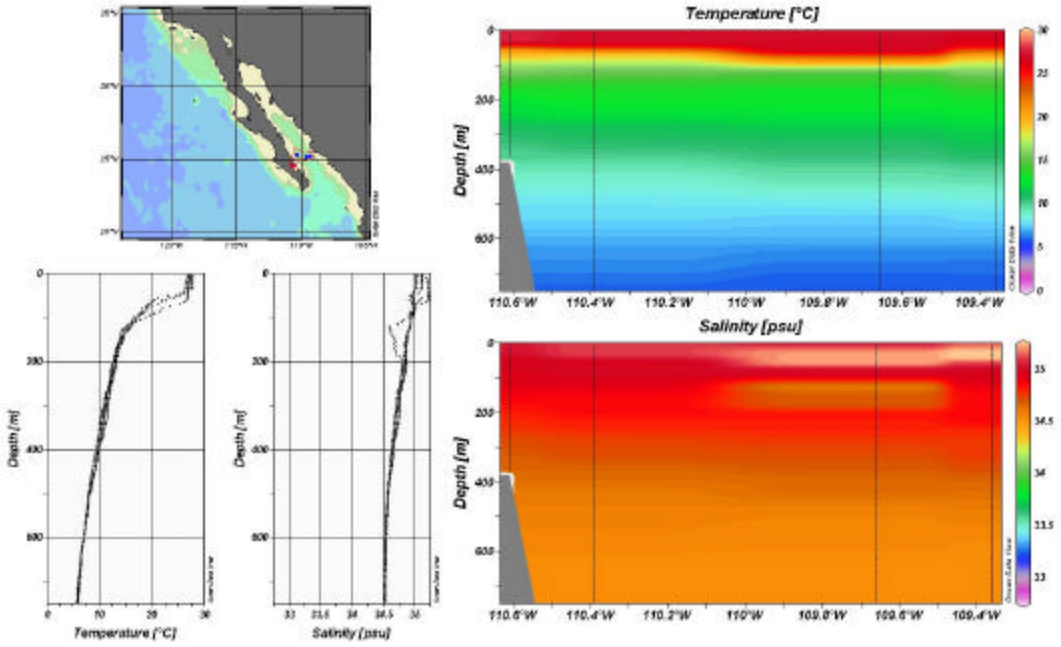
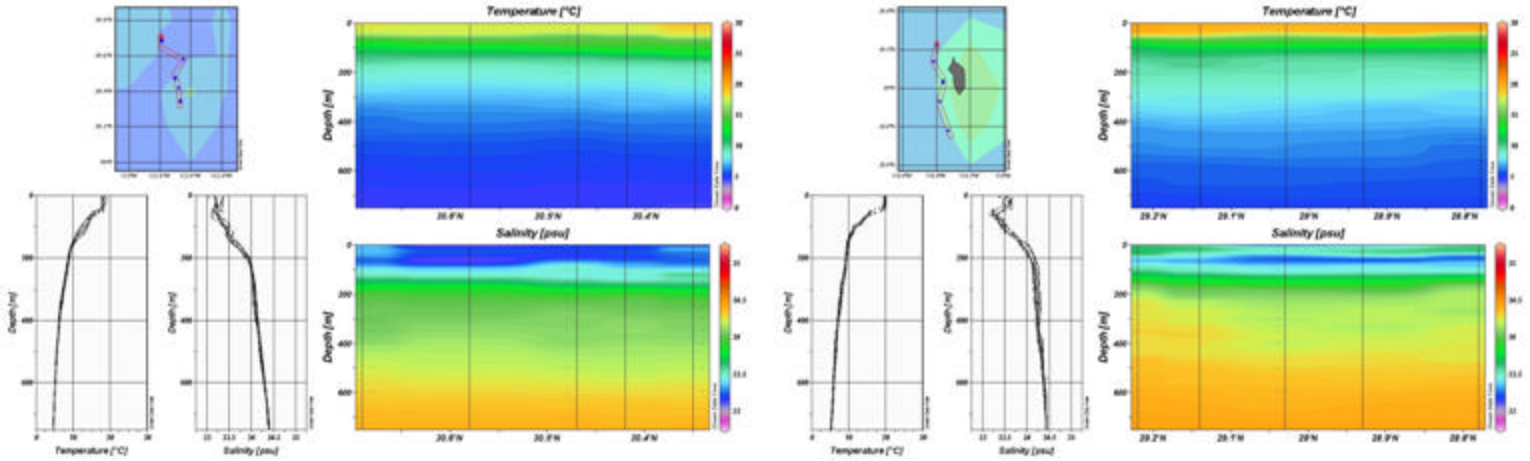


Figure 5 a-c. Temperature, salinity profiles and cross-section plots for Jasper seamount, Isla de Guadalupe and Cerralvo seamount during S207. Note temperature and salinity scales are the same as in Figure 4. Location and depth of CTD casts are shown by dashed lines in cross-section plots. Depth scale has been limited to upper 750m to emphasis surface features, though CTD casts frequently reached 1000 meters or more. Data interpolation by VG Gridding in ODV, 110 x-scale and 20 y-scale.

a) Jasper Seamount

b) Isla de Guadalupe



c) Cerralvo Seamount

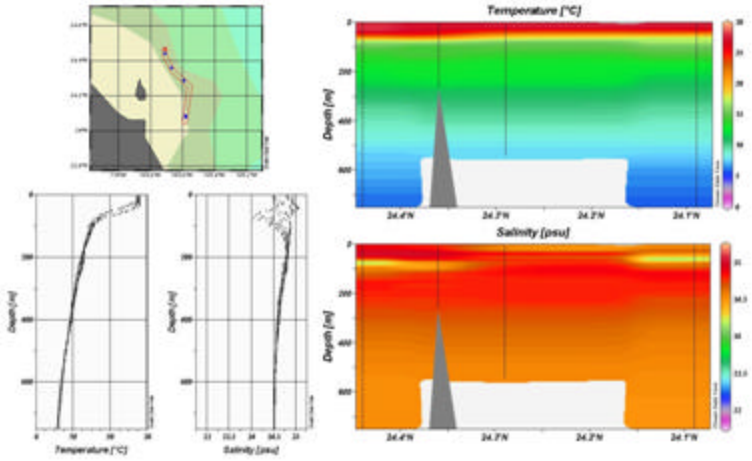


Figure 6. Current direction, magnitude (N-S and E-W components), and echo amplitude cross-section plots for S207. Distance (km) along x-axis follows the cruise track from San Diego in the north to Puerto Vallarta in the south. Gray shaded areas represent approximate location of seafloor. Data interpolation by VG Gridding in ODV, 20 x-scale and 20 y-scale.

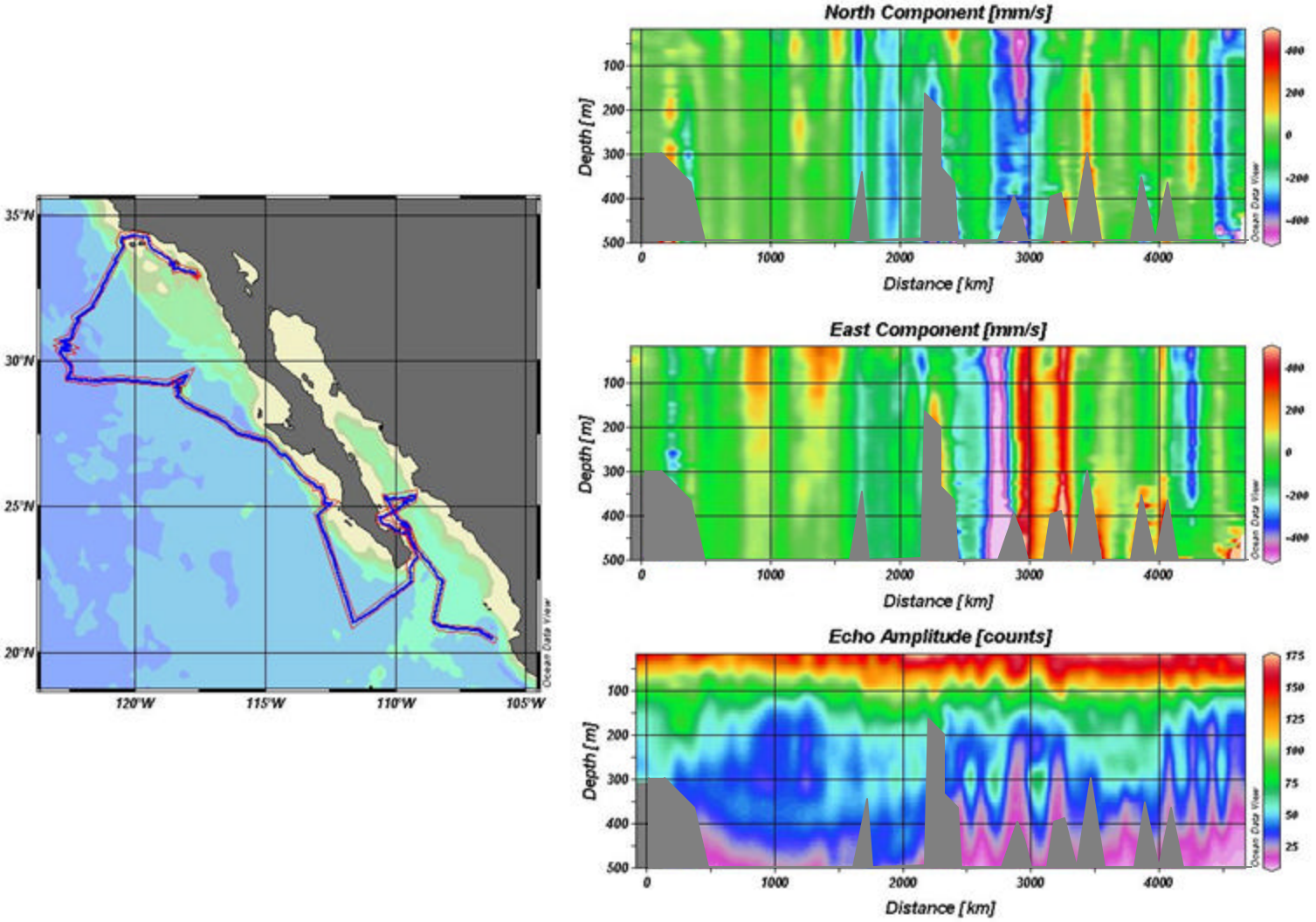


Table 6. Neuston station data for S207.

Station # (S207-)	Date (2006)	Local Time (+5 GMT)	Tow Area (m^2)	Temp (°C)	Salinity (ppt)	Zoo. Density (ml/m^2)	Halo. (#)	Mycto. (#)	Phyllo. (#)	Lepto. (#)	Plastic (#)	Tar
001	14-Oct	0029	2963	19.3	33.00	0.015	0	0	0	0	0	yes
011	17-Oct	2132	1235	18.1	30.50	0.023	0	9	0	0	0	no
014	18-Oct	2040	1932	18.9	30.05	0.040	0	1	0	0	0	no
015	19-Oct	0018	1443	18.6	32.16	0.036	0	0	0	0	0	no
016	19-Oct	0403	1468	18.8	32.33	0.020	0	0	0	0	0	no
017	19-Oct	1845	1446	18.3	32.13	0.129	0	0	0	0	0	no
020	20-Oct	2127	1952	18.3	32.12	0.026	0	6	0	0	0	no
023	22-Oct	0112	1859	19.4	32.09	0.023	9	1	0	0	0	no
025	23-Oct	0020	1667	19.5	33.20	0.026	11	4	5	0	0	no
027	23-Oct	2033	1861	19.6	33.88	0.061	9	0	0	0	1	no
028	24-Oct	0008	1615	19.5	32.90	0.019	0	4	0	0	0	no
029	24-Oct	0434	1708	19.5	32.88	0.005	10	0	0	0	0	no
032	26-Oct	0413	1405	20.0	33.09	0.021	0	4	0	0	0	no
037	26-Oct	2056	1595	20.7	33.17	0.019	0	10	0	0	0	no
040	28-Oct	0007	1741	20.5	33.06	0.052	0	9	0	0	0	yes
043	28-Oct	2357	1878	22.5	33.89	0.011	3	2	0	0	0	no
048	30-Oct	2213	1364	26.3	34.50	0.034	5	0	0	0	0	no
055	2-Nov	0:13	2376	27.3	34.25	0.014	192	85	3	0	0	no
060	3-Nov	20:46	1419	29.2	33.95	0.020	397	0	4	0	1	no
061	4-Nov	0113	1165	29.0	34.00	0.023	990	0	0	0	0	yes
062	4-Nov	0425	2326	28.9	34.28	0.014	7	0	1	1	1	no
064	5-Nov	0416	1727	27.7	34.70	0.021	0	0	0	0	0	no
066	5-Nov	1729	1531	27.9	34.44	0.014	3	0	0	0	0	no
070	11-Nov	0129	1851	27.8	37.75	0.019	1	0	2	0	1	no
073	12-Nov	0019	1554	27.5	35.09	0.066	57	0	0	0	2	no
075	12-Nov	2023	610	27.9	35.03	0.182	10	0	0	0	0	no
076	13-Nov	0017	600	27.6	35.03	0.142	111	0	0	0	0	no
077	13-Nov	0408	499	27.6	35.05	0.100	24	0	0	0	0	no
079	14-Nov	0004	1741	27.5	34.90	0.036	21	0	0	0	0	no
082	15-Nov	0003	926	27.4	34.97	0.144	ND	ND	ND	ND	ND	ND
084	16-Nov	0000	2327	28.3	34.65	0.032	268	2	0	0	0	no

Station # (S207-)	Date (2006)	Local Time (+5 GMT)	Tow Area (m^2)	Temp (°C)	Salinity (ppt)	Zoo. Density (ml/m^2)	Halo. (#)	Mycto. (#)	Phyllo. (#)	Lepto. (#)	Plastic (#)	Tar
089	18-Nov	0007	742	29.2	33.97	ND	ND	ND	ND	ND	ND	ND
091	19-Nov	0025	2222	29.3	33.99	ND	ND	ND	ND	ND	ND	ND

Tow area was derived from estimating tow distance in meters was calculated using distance between beginning and ending geographic positions. Net opening was 1.0 m wide by 0.5 m tall with a net mesh of 333 µm. Micronekton was removed using a 1 cm mesh sieve and biomass by volume displacement was determined; data available upon request. Zooplankton density is recorded as wet volume displacement per tow area (ml/m^2). Lantern fish (Family Myctophidae) spiny lobster larvae (phyllosoma), eel larvae (leptocephali) and *Halobates spp*. were sorted from net contents and recorded as numbers caught per tow. Floating plastic was also sorted from net contents, counted and recorded as numbers collected per tow. Floating tar was sorted from the nets contents and recorded present or absent. ND represents stations were no data was collected for that parameter.

Table 7. Meter net station data for S207.

Station # (S207-)	Date (2006)	Local Time (+5 GMT)	Target Depth (m)	Net Diameter (m)	Tow Volume (m3)	Zooplankton (ml/m²)	Mycto. (#)	Phyllo. (#)	Lepto. (#)	Descriptive Significance
014	18-Oct	2035	25	1MN	1889	0.084	3	0	0	Myctophid Madness
015	19-Oct	0012	25	1MN	1154	0.113	3	0	0	Myctophid Madness
016	19-Oct	0358	25	1MN	1335	0.144	5	0	0	Myctophid Madness
017	19-Oct	1802	400	1MN	5054	0.031	1	0	0	
017	19-Oct	1827	200	2MN	11648	0.030	8	0	0	
020	20-Oct	2246	400	1MN	5173	0.013	1	0	0	
020	20-Oct	2108	200	2MN	10037	0.014	4	0	0	
027	23-Oct	2028	25	1MN	1867	0.059	2	0	0	Myctophid Madness
028	24-Oct	0004	25	1MN	1424	0.079	11	0	0	Myctophid Madness
029	24-Oct	0428	25	1MN	2092	0.065	3	0	0	Myctophid Madness
032	26-Oct	0347	400	1MN	4351	0.060	2	1	0	
032	26-Oct	0354	200	2MN	8889	0.034	0	9	0	
037	26-Oct	2016	400	1MN	4726	0.020	3	0	0	
037	26-Oct	2037	200	2MN	8688	0.017	0	0	0	
060	3-Nov	2040	25	1MN	889	0.149	0	2	0	Myctophid Madness
061	4-Nov	0112	25	1MN	949	0.080	3	0	0	Myctophid Madness
062	4-Nov	0418	25	1MN	2698	0.060	0	1	0	Myctophid Madness
064	5-Nov	0403	100	2MN	7375	0.058	56	0	106	
064	5-Nov	0346	250	1MN	3649	0.045	9	0	27	
066	5-Nov	1714	105	1MN	2536	0.028	0	0	5	
066	5-Nov	1720	55	2MN	5904	0.011	1	0	13	
074	12-Nov	0609	250	1MN	1684	0.103	6	0	0	500 micron, CICIMAR
074	12-Nov	0609	225	1MN	2001	0.152	1	0	0	333 micron, CMarZ
075	12-Nov	2013	50	1MN	483	0.306	0	1	0	Myctophid Madness
076	13-Nov	0012	25	1MN	1308	0.115	1	0	0	Myctophid Madness
077	13-Nov	0400	50	1MN	642	0.203	0	0	1	Myctophid Madness
080	14-Nov	0614	254	1MN	845	0.177	1	0	0	333micron,CMarZ
080	14-Nov	0627	225	1MN	457	0.201	1	0	0	500micron, CICIMAR
083	15-Nov	0616	250	1MN	1599	0.099	0	0	0	333micron,CMarZ
083	15-Nov	0624	225	1MN	1234	ND	6	0	0	500micron, CICIMAR
085	16-Nov	0558	250	1MN	1159	0.063	6	0	0	333micron,CMarZ

Station # (S207-)	Date (2006)	Local Time (+5 GMT)	Target Depth (m)	Net Diameter (m)	Tow Volume (m3)	Zooplankton (ml/m²)	Mycto. (#)	Phyllo. (#)	Lepto. (#)	Descriptive Significance
085	16-Nov	0603	225	1MN	984	ND	ND	ND	ND	500micron, CICIMAR
088	17-Nov	0000	250	1MN	1050	ND	ND	ND	ND	500micron, CICIMAR
090	18-Nov	0610	250	1MN	2440	ND	ND	ND	ND	500micron, CICIMAR

Duplicate station numbers indicate multiple net deployments on the hydrowire for a given location. Tow volume was derived from estimating tow distance in meters was calculated using distance between beginning and ending geographic positions. Net size based on net diameters 1MN = 1 meter diameter, 2MN = 2 meter diameter. Net mesh of 333 µm for 1MN and 500 µm for 2MN. Micronekton was removed using a 1 cm mesh sieve and biomass by volume displacement was determined; data available upon request. Zooplankton density is recorded as wet volume displacement per tow area (ml/m^3). Lantern fish (Family Myctophidae), spiny lobster larvae (phyllosoma) and eel larvae (leptocephali) were sorted from net contents and recorded as numbers caught per tow. During Myctophid Madness sampling nets were towed at target depth continuously. For CICMAR and CMarZ sampling net deployments were vertical oblique tows: a single pass to target depth and then retrieval. ND represents stations were no data was collected for that parameter.

Table 8. Tucker trawl station data for S207.

Station # (S207-)	Date (2006)	Local Time (+5 GMT)	Target Depth (m)	Net Diameter (m)	Tow Volume (m3)	Zoop. Density (ml/m²)	Mycto. (#)	Phyllo. (#)	Lepto. (#)	Descriptive Significance
003	14-Oct	2136	350-250	2	1111	0.145	0	0	0	Below thermocline
003	14-Oct	2205	75-25	3	1667	0.103	2	0	0	Above thermocline
005	15-Oct	1010	162-12.5	2	1829	0.104	0	0	0	Below thermocline
005	15-Oct	1116	37-12.5	3	3883	0.071	0	0	0	Above thermocline
022	21-Oct	2138	180-20	2	1647	0.051	25	0	0	Below thermocline
022	21-Oct	2241	30-20	3	980	0.080	5	0	0	Above thermocline
024	22-Oct	1132	180-150	2	2222	0.008	0	0	0	Below thermocline
024	22-Oct	1204	150-20	3	1187	0.048	0	0	0	Above thermocline
038	27-Oct	1028	150-130	2	940	0.037	0	1	0	Below thermocline
038	27-Oct	1059	130-0	3	1737	0.219	0	3	0	Above thermocline
039	27-Oct	2030	130-150	2	1884	0.000	5	0	0	Below thermocline
039	27-Oct	2107	130-0	3	1620	0.000	5	0	0	Above thermocline
044	29-Oct	1127	130-100	2	2101	0.028	0	0	1	Below thermocline
044	29-Oct	1155	100-20	3	2624	0.040	0	0	0	Above thermocline
045	29-Oct	2129	130-100	2	1062	0.073	2	0	0	Below thermocline
045	29-Oct	2202	100-20	3	1669	0.117	0	0	0	Above thermocline
069	10-Nov	2149	125-100	2	862	0.020	2	0	0	Below thermocline
069	10-Nov	2212	40-30	3	1193	0.054	0	0	0	Above thermocline
071	11-Nov	1035	100-125	2	1120	0.046	0	0	4	Below thermocline
071	11-Nov	1110	30-40	3	1000	0.129	0	0	6	Above thermocline

Duplicate station numbers indicate multiple net deployments occurring in sequence during the tow. Net1 was open from the surface down to the deepest target dept listed for Net 2 and represents an oblique tow. This net was not processed and is not shown in the data table. A trigger weight closed Net 1, opening Net 2; the latter was towed for 30' between target depths. Again a trigger weight was used to close and open the final net. Net 3 was also towed between target depths. Net frame was 1 m^2 and nets were 333 um mesh. Micronekton was removed using a 1 cm mesh sieve and biomass by volume displacement was determined; data available upon request. Lantern fish (Family Myctophidae), spiny lobster larvae (phyllosoma) and eel larvae (leptocephali) were sorted from net contents and recorded as numbers caught per tow.

Table 9. Shipek grab station data for S207.

Station # (S207-)	Date (2006)	Time (local +5 GMT)	Sample Depth (m)	Location (Basin)	% 2000 (µm)	% 1000 (µm)	% 500 (µm)	% 250 (µm)	% 125 (µm)	% 63 (µm)	% < 63 (µm)
004	15-Oct	0739	61	Santa Barbara	~2 (wood pieces)	<1	<1	<1	<1	~2	94
005	15-Oct	0855	157	Santa Barbara	~2 (wood pieces)	<1	<1	1.9	7.5	39	51
006	15-Oct	1310	571	Santa Barbara	<1 (mineral)	<1	<1	1.7	1.5	1	95.5
007	15-Oct	1718	455	Santa Barbara	0	<1	<1	<1	<1	<1	98
008	15-Oct	1948	499	Santa Barbara	2 (shells)	<1	2.5	16	31	6.5	42
046	30-Oct	1436	128	Soledad	1 (shells)	4.5	34	26	32.5	2.8	8.2
047	30-Oct	2008	143	Soledad	36 (shells)	<1	<1	<1	<1	26	38
048	30-Oct	2140	179	Soledad	11 (shells)	30 (shells)	<1	<1	<1	2	55
049	31-Oct	0347	327	Soledad	0	<1	<1	<1	<1	<1	98
050	31-Oct	1013	314	Soledad	ND	ND	ND	ND	ND	ND	ND
051	31-Oct	1304	90	Soledad	13 (shells)	9	46	11.3	3.2	<1	7
052	31-Oct	1652	136	Soledad	0	2	<1	<1	<1	10.3	87

Sediment samples (100 ml) were wet sieved through a series of sieves; percent wet volume collected in each sieve is provided. Sample reflectometry (full spectrum) for dried sediment samples were also measured. ND = no data collected. Data available upon request.

Table 10. Secchi disc station data for S207.

Station # (S207-)	Date (2006)	Time (local +5 GMT)	Secchi Depth (m)	Location
002	14-Oct	0830	16	Southern CA Bight
013	18-Oct	0900	24	Offshore CA Current
024	22-Oct	0918	36	Offshore CA Current
026	23-Oct	0900	37	Offshore CA Current
049	31-Oct	0620	30	Soledad Basin
054	1-Nov	1023	31	Offshore Southern Baja
078	13-Nov	1106	23	Gulf of CA
081	14-Nov	1115	26	Gulf of CA

Table 11. Gravity core station data for S207.

Station # (S207-)	Date (2006)	Time (local +5 GMT)	Depth (m)	Location
049	31-Oct	0425	310	Soledad Basin

Figure 7. Image analysis of gravity core sediments. Digital images along entire core length (0-124 cm) were analyzed using Image-J software. Laminations, changes in sediment color and composition; were apparent along the core. Gray scale analysis of digital images using Image J software was able to quantitatively measure these laminations. The observed pattern in gray value / sediment composition plotted below was compared to published values of the Pacific Decadal Oscillation. Though no significant correlation was found, this study demonstrates the utility of Image-J software for quantitative analysis of core samples.

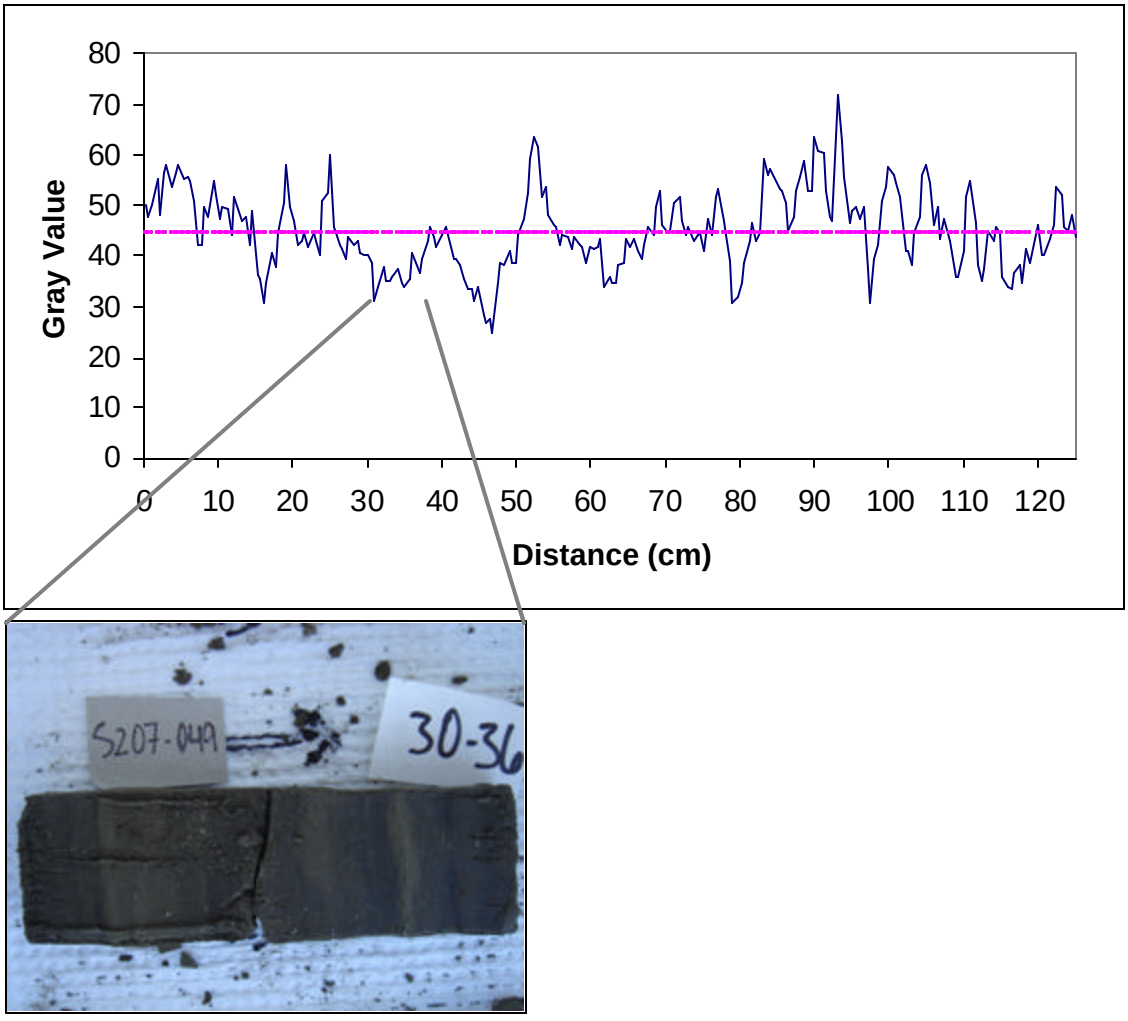


Table 12. Student research topics for S207.

	Research Team I: Surface Features and Biologic Distributions
Kyle Sherman	The taxonomic distribution of Halobates (Hemiptera: Gerridae) as a bio-indicator of water masses off the Baja Peninsula
Henry Wrenn, Robin Sarabia, Colin Stroud	Myctophid zoogeography and diel migration patterns as a function of zooplankton distribution and species specific prey selectivity
	Research Team II: Sub-Surface Features and Biologic Distributions
Kay Sherwood and Pam Texeira	Estimating the Efficiency of the Biological Pump, Comparing Inshore and Offshore regions off the Coast of Southern California and Mexico
Jovan Livada	Zooplankton contribution to the Biological Pump in the Southern California Bight, Baja Peninsula, and the Gulf of California Regions
Alan Worf and Jen Shlachter	Fluctuations in the Depth Range and Sound Speed of the SOFAR Channel in the Eastern Pacific Ocean
Meghan Lucy	The Influence of ENSO on the California Current and California undercurrent during early El Nino conditions
	Research Team III: Seamounts
Annie Carter and Courtney Bell	Seamounts and their Affect on the Surrounding Water Column Structure and Water Current
Hiro Tanaka	The Effects of Taylor Column Formation on Primary Productivity over Seamounts near Baja California
Nathaniel LaPier	Zooplankton mass effects and Composition over Jasper Seamount, Cerralvo Seamount and Isla de Guadalupe
Ro Wang and Ed Slater	Biomass and Biodiversity Variations of Epipelagic Micronekton Between Seamounts in the Temperate, Sub-Tropical, and Equatorial Biomes of the Eastern North Pacific
	Research Team IV: Ocean Basins
Amanda Sparks	Comparative Study of the Bathymetry of the Santa Barbara and Soledad Basins off the Coasts of Southern California and Baja California Mexico
Peter Horn	Current Patterns near the Santa Barbara and El Soledad Ocean Basins
Lilly Holland	A Comparison of the Oxygen and Nutrient Content in the Soledad and Santa Barbra Basins
Katie Forman	Sediment Distribution and Analysis in the Santa Barbara Basin and Soledad Basin
Allison Weide	Reconstruction of recent climatic variation through sediment core analysis in Soledad Basin, Baja California